EXHIBIT A

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF TEXAS

HOUSTON DIVISION

In re ANADARKO PETROLEUM CORPORATION SECURITIES LITIGATION	§ § § § §	Civil Action No. 4:20-cv-00576 CLASS ACTION The Honorable Charles R. Eskridge III

PLAINTIFFS' MOTION TO EXCLUDE CERTAIN TESTIMONY OF DEFENDANTS' CLASS CERTIFICATION EXPERT DR. ALLEN FERRELL

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I. INTRODUCTION

Defendants opposed class certification on the basis of their expert, Dr. Allen Ferrell's ("Ferrell") testimony that Anadarko's May 3 stock drop was ***not*** caused by Anadarko's 4:16 p.m. disclosure on May 2 that it was writing off ***$902 million*** and suspending further appraisal activity in the Shenandoah oil field ("Shen") – one of its largest Gulf of Mexico oil discoveries ever – ("corrective disclosure" or "Shen disclosure"), but instead, a 4:51 p.m. *Denver Post* article linking an Anadarko well to a Firestone, Colorado home explosion and estimated regulatory exposure at a potential remediation cost of $140 million.

After Plaintiffs thoroughly debunked Defendants' theory on reply, Ferrell found "new" disclosures in the far reaches of the Twitterverse – three tweets that don't mention Anadarko, about a local fire press conference on which no investor traded. Ferrell's claims that (i) these tweets disclosed the same news as the 4:51 *Denver Post* article "as early as 4:03 p.m.," and (ii) Firestone investigators disclosed during the press conference that Anadarko was responsible for the explosion, are belied by the factual record and thus unreliable.

In addition, Ferrell seeks to provide accounting opinions about Anadarko's reported book values for Shen. Not only do these opinions contradict the facts and basic accounting standards, but Ferrell has repeatedly admitted he is unqualified to offer accounting opinions. *See* Plaintiffs' Response to Defendants' Sur-Reply ("Response"), Ex. 1 at 194:17-21. The Court should take him at his word.

Finally, Ferrell seeks to submit expert testimony based upon a statistically-underpowered event study of another company – Shenandoah passive partner, ConocoPhillips. But Ferrell's ConocoPhillips' study has a ***67%*** Type II error rate, rendering

it more likely than not to draw a false conclusion as to impact for ***ConocoPhillips*** – it certainly cannot provide a reliable conclusion as to Anadarko. Courts and well-respected academics acknowledge the unreliability of this type of event study to establish absence of price impact. Accordingly, Ferrell's opinions based on the ConocoPhillips event study should be excluded.

Plaintiffs respectfully submit that the Court should find Ferrell's unreliable opinions are inadmissible and exclude them from its class-certification analysis pursuant to *Daubert v. Merrill Dow Pharms., Inc.*, 509 U.S. 579, 597 (1993), and Federal Rule of Evidence 702.

II. NATURE AND STAGE OF THE PROCEEDINGS

This securities fraud class action was filed on February 19, 2020. ECF 1. On January 19, 2021, Judge Atlas denied Defendants' motion to dismiss. ECF 63.

On October 1, 2021, Plaintiffs moved for class certification. ECF 86. Following full briefing (ECF 93, 96, 97, 110), the Court granted class certification on September 28, 2022. ECF 141 ("Class Certification Order"). Defendants moved for reconsideration, which the Court denied on June 30, 2023. ECF 143, 146, 198.

Defendants appealed, and on April 25, 2024, the Fifth Circuit vacated and remanded the Class Certification Order to allow Defendants to file a sur-reply. *Ga. Firefighters' Pension Fund v. Anadarko Petroleum Corp.*, 99 F.4th 770 (5th Cir. 2024).

On June 12, 2024, Defendants filed their sur-reply, along with an additional expert report from Ferrell. ECF 237-1.

III. FACTUAL BACKGROUND

The facts relevant to class certification are contained in Plaintiffs' motion for class certification (ECF 86 at 10-12),[1] and incorporated by reference herein.

Defendants concede Anadarko's stock traded in an efficient market and declined by a statistically significant amount on May 3 following their aftermarket announcement on May 2 of a $902 million write-down of Shen and appraisal suspension. Nevertheless, Defendants argue they met their burden of proving the Shen disclosure had ***no*** impact on Anadarko's stock, thus rebutting the fraud-on-the-market presumption of reliance. ECF 237 at 4. In Defendants' telling, it was disclosure of information regarding an April 17 home explosion in Firestone, Colorado that caused Anadarko's price to drop on May 3. *Id.*

In opposing class certification, Defendants proffered two expert reports: a December 10, 2021 report from Ferrell (ECF 93-1 at 5-92) and a June 12, 2024 sur-reply report from Ferrell (ECF 237-1 at 4-41). Ferrell's sur-reply report offers new testimony regarding Anadarko's reported book value for the Shen asset (*id.* at 7-8, 10-14 (¶¶3(b), 7-14)) and changes his prior May 2 aftermarket chronology (*id.* at 20-22, 26-27 (¶¶25-27, 33)). Ferrell also proffers an event study examining Shen partner ConocoPhillips' stock price on May 3, incorporated by reference (ECF 93-1 at 34-35 (¶¶56-57)), which he claims evidences the Shen disclosure's lack of price impact ***on Anadarko***. ECF 237-1 at 7, 9-10, 14-16 (¶¶3(a), 6, 15-19).

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[1] Pagination throughout is to that generated by the ECF system, unless otherwise noted.

IV. QUESTIONS PRESENTED

1. Do Ferrell's accounting-related opinions comply with *Daubert* and Rule 702 when he is admittedly not an accounting expert and his opinions contradict Generally Accepted Accounting Principles ("GAAP")?

2. Does Ferrell's attempt to change his testimony about the chronology of Firestone-related disclosures and inaccurate assumption that "news" was disclosed at 4:03 p.m. render his opinion unreliable and inadmissible?

3. Does Ferrell's ConocoPhillips event study satisfy *Daubert* and Rule 702 where (i) courts and academic literature recognize that the type of study Ferrell performed is incapable of reliably demonstrating a lack of price impact, and (ii) has a 67% error rate?

V. APPLICABLE LEGAL STANDARDS

Rule 702 provides that a "witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise" if:

> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;
>
> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. Rule 702 assigns district courts a gatekeeping role to ensure that scientific testimony is both reliable and relevant. *Daubert*, 509 U.S. at 597; *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 138 (1999) (*Daubert* applies to "all expert testimony."). Accordingly, all proposed expert testimony must meet "exacting standards of reliability" to

be admissible. *See Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000). The Fifth Circuit holds that "*Daubert* . . . applies with the same rigor at the class certification stage as at trial." *Anadarko*, 99 F.4th at 774.

Proponents of expert testimony bear the burden of establishing admissibility. *Orthoflex, Inc. v. ThermoTek, Inc.*, 986 F. Supp. 2d 776, 783 (N.D. Tex. 2013) (citing *Daubert*, 509 U.S. at 592, n.10; *Johnson v. Arkema, Inc.*, 685 F.3d 452, 460-61 (5th Cir. 2012)). Proponents must show the expert testimony is: (1) reliable; (2) relevant; and (3) within the proper scope of expert testimony. *Daubert*, 509 U.S. at 589.

To be considered reliable, "expert opinion [must] 'be grounded in the methods and procedures of science and . . . be more than unsupported speculation or subjective belief.'" *Johnson*, 685 F.3d at 459.[2] The following (non-exclusive) factors are considered in evaluating reliability:

> "(1) whether the theory or technique has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error of the method used and the existence and maintenance of standards controlling the technique's operation; and (4) whether the theory or method has been generally accepted by the scientific community."

Id. These factors are aimed at ferreting out "whether the expert is a hired gun or a person whose opinion in the courtroom will withstand the same scrutiny that it would among his professional peers." *Watkins v. Telsmith, Inc.*, 121 F.3d 984, 991 (5th Cir. 1997). The required "'analysis applies to all aspects of an expert's testimony: the methodology, the facts underlying the expert's opinion, the link between the facts and the conclusion, *et alia*.'" *Jacked Up, LLC v. Sara Lee Corp.*, 291 F. Supp. 3d 795, 801 (N.D. Tex. 2018). "Expert

[2] Unless otherwise noted, citations and footnotes are omitted and emphasis is added.

evidence that is not 'reliable at each and every step' is not admissible." *Jacked Up, L.L.C. v. Sara Lee Corp.*, 807 F. App'x 344, 348 (5th Cir. 2020).

To establish the relevance of expert testimony, the proponent must "demonstrate that the expert's 'reasoning or methodology can be properly applied to the facts in issue.'" *Johnson*, 685 F.3d at 459.

Finally, opinion is not within the proper scope of expert testimony where it: (1) proffers legal opinion or conclusions of law; or (2) goes "beyond the scope of [the expert's] expertise." *Goodman v. Harris Cnty.*, 571 F.3d 388, 399 (5th Cir. 2009); *see, e.g.*, *Cooper v. Meritor, Inc.*, 2019 WL 545187, at *18 (N.D. Miss. Feb. 11, 2019) (excluding opinion where expert "testified that he lacks the expertise to testify" on subject).

VI. ARGUMENT

Pursuant to *Daubert* and Rule 702, the Court should exclude certain of Ferrell's class-certification opinions, specifically his: (1) accounting opinions; (2) flip-flop on the Firestone "news" timeline; and (3) ConocoPhillips event study.

A. Ferrell Admitted He Is Not an Accounting Expert, and It Shows.

Ferrell's opinions regarding Shen's reported book value and whether the $902 million Shen write-off merely represented "sunk costs" should be excluded, because: (i) he lacks the requisite qualifications to offer accounting opinions; (ii) his opinions contradict GAAP and the factual record; and (iii) his opinion that the entire market assigned Shen a "low to zero" value is based solely on three of 37 analysts' views, which he admits were ***not*** universally or even majority-held. ECF 237-1 at 7-8, 10-14 (¶¶3(b), 7-10, 14).

1. Ferrell Is Not Qualified to Offer Accounting Opinions.

"Under Rule 702, 'a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise . . . .'" *Previto v. Ryobi N. Am., Inc.*, 766 F. Supp. 2d 759, 766 (S.D. Miss. 2010) (quoting Fed. R. Evid. 702).

Ferrell does not qualify as an accounting expert on any of these grounds. He is not a CPA, he doesn't study or teach accounting, and at deposition, he ***repeatedly*** admitted he couldn't answer questions about his own accounting-related opinions precisely because ***he is not an accounting expert***. *See* ECF 93-1 at 47-53 (Appendix A); Response, Ex. 1 at 15:25-16:2, 195:11-17. For example, asked whether "[t]he economic benefits held through Anadarko's assets represented potential future cash in-flows," Ferrell stated: "That, I don't know. ***We've just hit the end of . . . my knowledge, so I'm out***." Response, Ex. 1 at 195:25-196:6. Ferrell also asserted his lack of accounting experience to evade other questions directly relevant to his opinions:

- "Q . . . It's not true that the book value of an asset is the same as a sunk cost, right? A We're going to quickly get into accounting and beyond my knowledge." *Id.* at 194:17-21.
    - *Cf.* ECF 237-1 at 11 (¶9) ("The value of Shenandoah (like any asset) is equal to the 'the [sic] present value of ***future*** cash flows, not sunk costs. . . . . This has implications for the value of Anadarko, as the value of Anadarko is equal to the value of all of its assets, including Shenandoah.").
- "Q . . . You understand that that the write-down included assets that were acquired from Kerr-Mcgee? A Are we – if this is a reference to the leasehold interest, that's my understanding. Q . . . [T]hat was based on its fair value at the date of the acquisition; right? A: I don't know." Response, Ex. 1 at 196:20-197:3

- *Cf.* ECF 237-1 at 10-11 (¶8) ("The purchase price allocation was an accounting entry to record the acquired assets (including Shenandoah) based on their estimated value in 2006. Thus this component of the write-off . . . would not be expected to affect its other partners in Shenandoah . . . .").

Ferrell's concession that he is not an accounting expert, combined with his other testimony demonstrating his lack of expertise in accounting, requires exclusion of his accounting opinions. *See, e.g.*, *Cooper*, 2019 WL 545187, at *18 (excluding proffered opinion where expert "testified that he lacks the expertise to testify" on subject); *Rushing v. Yeargain*, 2022 WL 4545612, at *8 (M.D. La. June 10, 2022) (psychology expert's opinions regarding workplace policies beyond scope of expertise); *Right of Way Maint. Co. v. Gyro-Trac, Inc.*, 2007 WL 1428634, at *4 (S.D. Tex. May 11, 2007) (attorney with engineering degree could not "testify to engineering matters because he [was] unqualified to do so"); *Diamond Offshore Co. v. Survival Sys. Int'l, Inc.*, 2013 WL 371648, at *13 (S.D. Tex. Jan. 29, 2013) (proposed expert was "unqualified to testify as a financial expert" despite economics degrees and relevant experience).

2. Ferrell's Opinions Are Inconsistent with GAAP and Anadarko's Own Representations.

Ferrell's opinions regarding Shen's book value are inconsistent with basic GAAP ***and*** Anadarko's representations to investors that it complied with GAAP, rendering them unreliable and irrelevant. "Relevance depends upon 'whether [the expert's] reasoning or methodology properly can be applied to the facts in issue.'" *Knight v. Kirby Inland Marine Inc.*, 482 F.3d 347, 352 (5th Cir. 2007). "Testimony is irrelevant . . . when an expert offers a

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conclusion based on assumptions unsupported by the facts of the case." *Rolls-Royce Corp. v. Heros, Inc.*, 2010 WL 184313, at *6 (N.D. Tex. Jan. 14, 2010).

Here, Ferrell opines that the "$902 million in write-offs are what economists call 'sunk costs,'" which "are past cash outlays, ***not future cash flows***." ECF 111-1 at 15 (¶13); ECF 237-1 at 11-12 (¶9). This is inconsistent with Anadarko's Class Period representations to investors that its accounting complied with GAAP. *See* Ex. 1 at 93 ("The Consolidated Financial Statements have been prepared in conformity with accounting principles generally accepted in the United States."); Ex. 2 at 91 (same).[3]

Throughout the Class Period, Anadarko's interests in Shen, including its property interests acquired through the acquisition of Kerr-McGee Corporation in 2006, and suspended exploratory well costs related to the appraisal of Shen, were reported and held out to investors as ***book assets*** of Anadarko. *See*, *e.g.*, Ex. 3 at 12-13. Under GAAP, "[a]ssets" are defined as "***probable future economic benefits*** obtained or controlled by a particular entity as a result of past transactions or events." Ex. 4, ¶25. "[E]ssential" to qualifying as an "asset" is that it "embodies a ***probable future benefit*** that involves a capacity . . . to contribute directly or indirectly ***to future net cash in-flows***." *Id.*, ¶26; *see CNG Transmission Corp. v. FERC*, 40 F.3d 1289, 1296 (D.C. Cir. 1994) ("FERC does not act arbitrarily or capriciously by denying regulatory asset treatment for a gas loss in the absence of a showing that the regulated party will likely receive a future economic benefit . . . ."). In other words, by recording Shen as an asset during the Class Period, Anadarko represented it

[3] All exhibits referenced herein are attached hereto unless otherwise noted.

embodied a "probable future benefit" that would "contribute . . . to future net cash inflows" (Ex. 4, ¶26) – and Ferrell's opinion directly contradicts that representation.

Similarly, when asked whether Anadarko's $902 million write-off of the Shen asset indicated Shen's expected future economic benefits were reduced to zero, Ferrell asserted that the write-down was not a "DCF [discounted cash flow] as an economist would think about it." Response, Ex. 1 at 198:4-12. However, this reflects a misunderstanding of basic GAAP principles: GAAP requires a company to recognize an impairment whenever the book value of an asset "exceeds ***the sum of the undiscounted cash flows*** expected to result from the use and eventual disposition of the asset." Ex. 5. In other words, GAAP required Anadarko to do an analysis that Ferrell's "sunk costs" opinion assumes did not occur because there were no "cash flows" at issue. If Ferrell were right, Anadarko was necessarily not in compliance with GAAP throughout the Class Period.

Finally, Ferrell opines that, "because the value of Shenandoah embedded in Anadarko's stock prior to the May 2 announcement would have been 'low to zero,' any loss thereof also would have been 'low to zero.'" ECF 237-1 at 13-14 (¶14). Ferrell bases this opinion on the fact that "***some analysts***" assigned a "'low to zero'" value to Shen prior to the corrective disclosure – and by "some," he means ***three*** out of the ***37*** analysts covering Anadarko at that time. *Id.* (citing 93-1 at 43 (¶69)). Worse, he admits that other analysts attributed ***substantial value*** to Shen throughout the Class Period (Response, Ex. 1 at 89:20-90:12), but offers no explanation as to why he discarded these data points. ECF 237-1 at 13-14 (¶14). Nor does Ferrell explain why he decided to adopt the three analyst reports he cites as representative of the market overall when so many other reports contained in his reliance

materials contradict those views. *See, e.g.*, Ex. 6 at APC-0139908 (February 2, 2015 Capital One analyst report assigning Shen $4 per share value); Ex. 7 at APC-01331047 (October 11, 2016 Morgan Stanley analyst report noting inclusion of Shen in net asset valuation ("NAV")) (ECF 93-1 at 77 (Appendix B at no. 745)); Ex. 8 at APC_01334952 (May 3, 2017 Goldman Sachs analyst report lowering "NAV by $1/share associated with the Shenandoah project") (ECF 93-1 at 85 (Appendix B at no. 1056)); Ex. 9 at APC-01328840 (May 3, 2016 Wolfe analyst report assigning $2.09/share of risked NAV to Shen) (ECF 93-1 at 73 (Appendix B at no. 571)).

Ferrell's cherry-picking and inexplicable failure to account for ***known*** data contradicting an assumption fundamental to his analysis invalidates his conclusion and fails *Daubert*. *See Moore v. Int'l Paint, L.L.C.*, 547 F. App'x 513, 516 (5th Cir. 2013) (excluding expert opinion that assumed occurrence of condition ***every*** time when evidence showed it only occurred ***some*** of the time); *Jacked Up*, 291 F. Supp. 3d at 806-07 (excluding expert opinion where there was no explanation of "basis for several of [expert's] assumptions that are unsupported by or contradict the evidence at hand"); *Fail-Safe, L.L.C. v. A.O. Smith Corp.*, 744 F. Supp. 2d 870, 889, 891 (E.D. Wis. 2010) (where expert "'cherry picked'" available data and did not provide explanation "on why he chose the data he did, the court can only surmise that the witness's methodology is utterly unreliable and must be excluded"); *see also Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 144 (1997) ("[n]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert").

In sum, "an opinion based on 'insufficient, erroneous information,' fails the reliability standard" (*Moore*, 547 F. App'x at 515), as does an opinion contradicting relevant principles and practices of the profession. Fed. R. Evid. 702. Ferrell's accounting opinions do both, and so are inadmissible under *Daubert*.

B. Ferrell's New Aftermarket Firestone Analysis Is Based on False Assumptions and Should Be Excluded.

In his report, Ferrell argued that "news linking an Anadarko well to a house explosion in Firestone, Colorado that was also disclosed after market close on May 2, 2017" caused Anadarko's May 3 decline, not the Shen disclosures at 4:16 pm. ECF 93-1 at 39-40 (¶64). Specifically, he cited a 4:51 p.m. article from the *Denver Post*, an Anadarko press release at 5:18 p.m., a 7:01 p.m. article from *Dow Jones Institutional News*, and an 8:11 p.m. article by *The Associated Press*. *See id.* at 57 (Appendix B); *id.* at 39-40 (¶64).

On rebuttal, Plaintiffs' expert, Bjorn Steinholt, CFA ("Steinholt"), demonstrated that Ferrell's chronology disproved Defendants' theory because before the earliest Firestone disclosure Ferrell cited at 4:51 p.m. (the *Denver Post* article), *Bloomberg* had reported that Anadarko's stock price had fallen 4.1% as of 4:43 p.m. ECF 96-1 at 27-28 (¶38).

Given this damning evidence, on sur-reply, Ferrell tries to change his testimony, now claiming "the news in the *Denver Post* article was disclosed as early as 4:03 PM, prior to Anadarko's 1Q 2017 earnings release at 4:16 PM." ECF 237-1 at 20 (¶25); ECF 111-1 at 10 (¶6). Specifically, Ferrell points to three tweets at 4:03 p.m., 4:09 p.m., and 4:11 p.m. concerning a press conference held by the local Firestone, Colorado fire department providing an update on their investigation. ECF 237-1 at 20-22 (¶¶25-26 & n.60). These

tweets were not identified through Ferrell's methodology for identifying news; indeed, it is unclear what methodology (if any) Ferrell now employed to identify these new purported "disclosures" he missed before – highlighting the unreliability of these new opinions. *See* ECF 237-1at 20 (¶25); Response, Ex. 1 at 68:1-69:21, 209:7-210:13.

According to Ferrell, during the press conference, the fire department disclosed its finding (to which the market then purportedly reacted) that "Anadarko was responsible" for the Firestone explosion. Response, Ex. 1 at 134:18-25. There are several fundamental problems with these opinions that render them entirely unreliable.

First, Ferrell does not, and at deposition could not, point to any evidence that investors had actually read the three tweets he pointed to as impacting Anadarko's stock price. *Id.* at 211:7-14. In other words, Ferrell's opinion is based on pure speculation. *See Jacked Up*, 291 F. Supp. 3d at 809-10 (excluding opinion testimony based on assumptions "that remain unexplained or unsupported by the record").

Second, the Firestone investigators never assigned responsibility to ***anyone*** for the accident during the press conference – much less Anadarko. Rather, they stated that it was the pipeline, rather than the wellhead (currently owned by Anadarko), that caused the explosion: "[W]e don't have all the facts as to how the [gas] line [was] cut" and "[w]e don't know who the original owners of the cut or abandoned lines were. That's part of the ongoing investigation . . . ." Ex. 10 at 6-7; Response, Ex. 6.

Given the gap between Ferrell's testimony and the facts, "the Court . . . does not need to admit [this] testimony based on indisputably wrong facts." *Ramos v. Home Depot Inc.*, 2022 WL 615023, at *1 (N.D. Tex. Mar. 1, 2022). Tellingly, Ferrell repeatedly evaded

questions about the actual content of the press conference at his deposition. Response, Ex. 1 at 135:1-136:12.

Finally, the linkage to Anadarko's well was already known by the market by April 26 when Anadarko disclosed its well was 200 feet from the house that exploded and that it was shutting-in 3,000 vertical wells in Colorado as a safety precaution. By Ferrell's own admission, Anadarko's well was a suspected cause of the explosion, so by his standards, it would not be expected to have any price impact. *See id.* at 64:23-65:5, 120:18-121:10, 123:10-16; Response, Ex. 6.

Notably, this is not the first time Ferrell has been caught playing fast and loose with disclosure chronologies in his price-impact analyses. *See In re Signet Jewelers Ltd. Sec. Litig.*, 2019 WL 3001084, at *15-*16 (S.D.N.Y. July 10, 2019) (The court rejected Ferrell's price-impact argument: "Professor Ferrell acknowledges in his deposition that the . . . article contained information that had not been disclosed in any of the prior publications on which he relied. . . . How then, does he also take the position that there was an absence of price impact arising from publication of the [same] article?"); *id.* at *17 ("Equally unsupported is Professor Ferrell's contention that the 13% decline in Signet's share price was the result of 'bad publicity' . . . . Certainly, common sense suggests otherwise" and "[b]y his own admission, Professor Ferrell did not perform any event study or other empirical analysis to test that proposition."); *Lawrence E. Jaffe Pension Plan v. Household Int'l, Inc.*, 2016 WL 374132, at *2 (N.D. Ill. Feb. 1, 2016) ("[M]uch of the information defense expert Ferrell discusses was disclosed well before or well after the days on which Fischel's event study shows that there was a statistically significant stock price decline. Because the parties

stipulated that Household's stock trades in an efficient market . . . it is not clear how such disclosures can explain the statistically significant price declines."); *Homyk v. ChemoCentryx, Inc.*, 2024 WL 1141699, at *5 (N.D. Cal. Mar. 6, 2024) (rejecting Ferrell's argument that facts allegedly revealed had been disclosed as factually incorrect because disclosure "omit[ted] key details" alleged in complaint).

Ferrell's newfound Firestone opinions are unreliable and thus inadmissible.

C. Ferrell's ConocoPhillips May 3 Event Study Fails the *Daubert* and Rule 702 Reliability Requirements.

Finally, Ferrell's ConocoPhillips event study is statistically underpowered and unreliable to draw the conclusion he does – that ConocoPhillips' lack of stock price movement following the corrective disclosure is evidence of its lack of price impact for Anadarko. ECF 93-1 at 21, 35 (¶¶32, 57); ECF 237-1 at 16 (¶19).

Courts and prominent economic scholars alike recognize that single firm event studies ("SFES") – like Ferrell's ConocoPhillips event study here – lack sufficient sample size to be able to accurately detect anything but large impacts on stock prices. While SFES can be constructed, as Steinholt's was (ECF 96-1 at 32 (¶46)), to have a very low rate of Type I error (*i.e.*, error resulting in a false positive conclusion that a corrective disclosure ***did*** have price impact), they are notorious for having high rates of Type II error (error resulting in a false negative conclusion that a corrective disclose ***did not*** have price impact).

This problem – high Type II errors resulting in false negatives – has been explained clearly by several prominent economic scholars, including Duke University's Alon Brav and the University of Pennsylvania's Jill Fisch. As Brav and his co-author noted:

> [A]n SFES often has ***low statistical "power" to detect an economically meaningful price impact***, which typically must be at least approximately twice as large as the standard deviation of daily (abnormal) returns for the examined firm. But ***requiring conventional levels of statistical significance when power is low effectively gives a "free pass" to economically meaningful securities fraud*** because the SFES simply cannot detect price impacts below a high threshold. Courts, ignoring low power, then conclude that some economically large price impacts are immaterial. ***Courts err because of their mistaken premise that statistical insignificance indicates the probable absence of a price impact***. Overreliance on statistical significance without consideration of statistical power "leads to a decision-making regime in which the probability of an incorrect exoneration far exceeds the probability of an incorrect condemnation."

Alon Brav & J.B. Heaton, *Event Studies in Securities Litigation: Low Power, Confounding Effects, and Bias*, 93 Wash. U. L. Rev. 583, 586 (2015); Jill E. Fisch, *et al.*, *The Logic and Limits of Event Studies in Securities Fraud Litigation*, 96 Tex. L. Rev. 553, 615 (2018) ("Recent work has pointed out that in single-firm event studies used in securities litigation, requiring a Type I error rate of only 5% yields an ***extremely high Type II error rate***.").

"[T]he known or potential rate of error of a technique or theory when applied" is an important consideration in the reliability inquiry. *Moore v. Ashland Chem. Inc.*, 151 F.3d 269, 275 (5th Cir. 2009). Ferrell, while disclosing his rate of Type I error, fails to disclose his event study's rate of Type II error – the most relevant error rate to his analysis, given his test for a ***lack*** of price impact. *Moe v. Grinnell Coll.*, 547 F. Supp. 3d 841, 850 (S.D. Iowa 2021) (excluding expert where error rate provided for only one aspect of analysis). However, based on Ferrell's own parameters, his ConocoPhillips event study has a Type II error rate of ***67%*** – meaning it is ***more likely to be wrong than right*** and is indisputably unreliable. *Kelley v. Am. Heyer-Schulte Corp.*, 957 F. Supp. 873, 883 (W.D. Tex. 1997)

("Such a high rate of error [62.5%] forces the Court to conclude that this testimony . . . must be excluded.").

The risk of Type II error is particularly evident here when examining the ConocoPhillips study through the lens of common sense. Set aside that ConocoPhillips had announced its exit from deepwater exploration two years earlier, making its Shen stake qualitatively less valuable, if not quantitatively so. Empirically, ConocoPhillips' 30% working interest in Shen at Class-Period-end means the impact of Anadarko's disclosure of the dry Shen-6 sidetrack and suspension of further appraisal on its stock price is less than the impact on Anadarko's (which had a 33% interest and was the operator of the field, resulting in a premium). ECF 96-1 at 19-21 (¶¶27-28). Yet, according to Ferrell's data, for the write-off to have a statistically significant impact on ConocoPhillips' stock, ConocoPhillips would have had to write off ***more*** for Shen than Anadarko did. *Id.* ConocoPhillips' much greater market capitalization ($57.77 billion to Anadarko's $31.7 billion) would require a $1.24 billion impact on market capitalization before Ferrell's event study would detect it as statistically significant. *Id.* at 20-22 (¶¶28-29). In other words, Ferrell's event study would inevitably result in Type II error.

Numerous courts have acknowledged that SFES do not provide reliable evidence of a ***lack*** of price impact at class certification. Indeed, the lack of a statistically significant price movement does ***not*** establish a lack of price impact. *See, e.g.*, *Rooney v. EZCORP*, *Inc.*, 330 F.R.D. 439, 450 (W.D. Tex. 2019) ("A statistically significant price adjustment following a corrective disclosure is evidence the original misrepresentation did, in fact, affect the stock price. The converse, however, is not true – the absence of a statistically significant price

adjustment does ***not*** show the stock price was unaffected by the misrepresentation.") (emphasis in original); *Del. Cnty. Emps.' Ret. Sys. v. Cabot Oil & Gas Corp.*, 2023 WL 6300569, at *9-*10 (S.D. Tex. Sept. 27, 2023) (finding *Rooney* persuasive); *Monroe Cnty. Emps.' Ret. Sys v. S. Co.*, 332 F.R.D. 370, 394 (N.D. Ga. 2019) ("In recognition of [a] basic truism of statistics, courts routinely reject the argument that a non-statistically significant stock price decline proves an absence of price impact."). This Court should do the same, and exclude Ferrell's unreliable ConocoPhillips study.

VII. CONCLUSION

For the above reasons, the Court should exclude the following class-certification opinions offered by Ferrell: (1) his accounting opinions; (2) his flip-flop on the aftermarket Firestone "news" timeline; and (3) his ConocoPhillips event study.

DATED: July 12, 2024

Respectfully submitted,

KENDALL LAW GROUP, PLLC
JOE KENDALL (Texas Bar No. 11260700)
(SDTX Bar No. 30973)
Attorney-in-charge

s/ Joe Kendall
JOE KENDALL

3811 Turtle Creek Blvd., Suite 825
Dallas, TX 75219
Telephone: 214/744-3000
214/744-3015 (fax)

Texas Local Counsel for Plaintiff

4855-5933-4608.v1

ROBBINS GELLER RUDMAN & DOWD LLP
MARK SOLOMON
DANIEL S. DROSMAN
RACHEL L. JENSEN
LUKE O. BROOKS
HILLARY B. STAKEM
FRANCISCO J. MEJIA
MEGAN A. ROSSI
NICOLE Q. GILLILAND
655 West Broadway, Suite 1900
San Diego, CA 92101
Telephone: 619/231-1058
619/231-7423 (fax)

Lead Counsel

CERTIFICATION OF WORD COUNT

In accordance with Rule 18(c) of Your Honor's Court Procedures, I hereby certify that this document contains 4,993 words, exclusive of the caption, the table of contents, the table of authorities, and the signature block.

DATED: July 12, 2024

s/ Joe Kendall
JOE KENDALL

CERTIFICATE OF SERVICE

I hereby certify that I served the foregoing on all counsel of record who have appeared in this matter via the Court's CM/ECF system on this, the 12th day of July, 2024.

s/ Joe Kendall
JOE KENDALL

EXHIBIT 1

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2014
or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to
Commission File No. 1-8968

ANADARKO PETROLEUM CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**76-0146568**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1201 Lake Robbins Drive, The Woodlands, Texas 77380-1046
(Address of principal executive offices)

Registrant's telephone number, including area code **(832) 636-1000**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Name of each exchange on which registered**
Common Stock, par value $0.10 per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the Company's common stock held by non-affiliates of the registrant on June 30, 2014, was $55.3 billion based on the closing price as reported on the New York Stock Exchange.

The number of shares outstanding of the Company's common stock at January 30, 2015, is shown below:

Title of Class	**Number of Shares Outstanding**
Common Stock, par value $0.10 per share	506,650,285

Documents Incorporated By Reference

Portions of the Proxy Statement for the Annual Meeting of Stockholders of Anadarko Petroleum Corporation to be held May 12, 2015 (to be filed with the Securities and Exchange Commission prior to April 2, 2015), are incorporated by reference into Part III of this Form 10-K.

Other	**327**	246	232
Changes in assets and liabilities			
Deepwater Horizon settlement and related costs	**90**	(2)	24
Algeria exceptional profits tax settlement	**—**	730	(791)
Tronox-related contingent loss	**4,360**	850	(250)
(Increase) decrease in accounts receivable	**103**	(11)	520
Increase (decrease) in accounts payable and accrued expenses	**7**	150	(476)
Other items—net	**(71)**	146	126
Net cash provided by (used in) operating activities	**8,466**	8,888	8,339
Cash Flows from Investing Activities			
Additions to properties and equipment and dry hole costs	**(9,508)**	(7,721)	(7,242)
Acquisition of businesses	**(1,527)**	(473)	—
Divestitures of properties and equipment and other assets	**4,968**	567	657
Other—net	**(405)**	(589)	(284)
Net cash provided by (used in) investing activities	**(6,472)**	(8,216)	(6,869)
Cash Flows from Financing Activities			
Borrowings, net of issuance costs	**2,879**	958	1,042
Repayments of debt	**(1,425)**	(710)	(3,044)
Financing portion of net cash paid in settlement of derivative instruments	**(222)**	—	—
Increase (decrease) in outstanding checks	**62**	(13)	(69)
Dividends paid	**(505)**	(274)	(181)
Repurchase of common stock	**(45)**	(54)	(37)
Issuance of common stock, including tax benefit on share-based compensation awards	**121**	146	103
Sale of subsidiary units	**1,026**	724	623
Distributions to noncontrolling interest owners	**(216)**	(156)	(112)
Contributions from noncontrolling interest owners	**—**	2	16
Net cash provided by (used in) financing activities	**1,675**	623	(1,659)
Effect of Exchange Rate Changes on Cash	**2**	(68)	(37)
Net Increase (Decrease) in Cash and Cash Equivalents	**3,671**	1,227	(226)
Cash and Cash Equivalents at Beginning of Period	**3,698**	2,471	2,697
Cash and Cash Equivalents at End of Period	**$ 7,369**	$ 3,698	$ 2,471

See accompanying Notes to Consolidated Financial Statements.

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Index to Financial Statements

ANADARKO PETROLEUM CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2014, 2013, AND 2012

1. Summary of Significant Accounting Policies

General Anadarko Petroleum Corporation is engaged in the exploration, development, production, and marketing of natural gas, oil, condensate, natural gas liquids (NGLs), and anticipated production of liquefied natural gas (LNG). In addition, the Company engages in the gathering, processing, treating, and transporting of natural gas, oil, and NGLs. The Company also participates in the hard-minerals business through royalty arrangements. Unless the context otherwise requires, the terms “Anadarko” and “Company” refer to Anadarko Petroleum Corporation and its consolidated subsidiaries.

Basis of Presentation The Consolidated Financial Statements have been prepared in conformity with accounting principles generally accepted in the United States. The Consolidated Financial Statements include the accounts of Anadarko and entities in which it holds a controlling interest. All intercompany transactions have been eliminated. Undivided interests in oil and natural-gas exploration and production joint ventures are consolidated on a proportionate basis. Investments in non-controlled entities, over which Anadarko has the ability to exercise significant influence over operating and financial policies, are accounted for using the equity method. In applying the equity method of accounting, the investments are initially recognized at cost, and subsequently adjusted for the Company's proportionate share of earnings, losses, and distributions. Other investments are carried at original cost. Investments accounted for using the equity method and cost method are reported as a component of other assets. Certain prior-period amounts have been reclassified to conform to the current-year presentation.

Use of Estimates The preparation of financial statements in accordance with generally accepted accounting principles in the United States (GAAP) requires management to make informed judgments and estimates that affect the reported amounts of assets, liabilities, revenues, and expenses. Management evaluates its estimates and related assumptions regularly, including those related to proved reserves; the value of properties and equipment; goodwill; intangible assets; asset retirement obligations; litigation liabilities; environmental liabilities; pension assets, liabilities, and costs; income taxes; and fair values. Changes in facts and circumstances or additional information may result in revised estimates, and actual results may differ from these estimates.

Fair Value Fair value is defined as the price that would be received to sell an asset or the price paid to transfer a liability in an orderly transaction between market participants at the measurement date. Inputs used in determining fair value are characterized according to a hierarchy that prioritizes those inputs based on the degree to which they are observable. The three input levels of the fair-value hierarchy are as follows:

Level 1—Inputs represent quoted prices in active markets for identical assets or liabilities (for example, exchange-traded commodity derivatives).

Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly (for example, quoted market prices for similar assets or liabilities in active markets or quoted market prices for identical assets or liabilities in markets not considered to be active, inputs other than quoted prices that are observable for the asset or liability, or market-corroborated inputs).

Level 3—Inputs that are not observable from objective sources, such as the Company's internally developed assumptions used in pricing an asset or liability (for example, an estimate of future cash flows used in the Company's internally developed present value of future cash flows model that underlies the fair-value measurement).

In determining fair value, the Company uses observable market data when available, or models that incorporate observable market data. In addition to market information, the Company incorporates transaction-specific details that, in management's judgment, market participants would take into account in measuring fair value.

ANADARKO PETROLEUM CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2014, 2013, AND 2012

1. Summary of Significant Accounting Policies (Continued)

In arriving at fair-value estimates, the Company uses relevant observable inputs available for the valuation technique employed. If a fair-value measurement reflects inputs at multiple levels within the hierarchy, the fair-value measurement is characterized based on the lowest level of input that is significant to the fair-value measurement. For Anadarko, recurring fair-value measurements are performed for interest-rate derivatives, commodity derivatives, and investments in trading securities.

The carrying amount of cash and cash equivalents, accounts receivable, and accounts payable reported on the Consolidated Balance Sheets approximates fair value. The fair value of debt is the estimated amount the Company would have to pay to repurchase its debt, including any premium or discount attributable to the difference between the stated interest rate and market interest rate at each balance sheet date. Debt fair values, as disclosed in *Note 12—Debt and Interest Expense*, are based on quoted market prices for identical instruments, if available, or based on valuations of similar debt instruments.

Non-financial assets and liabilities initially measured at fair value include certain assets and liabilities acquired in a business combination or through a non-monetary exchange transaction, intangible assets, goodwill, asset retirement obligations, exit or disposal costs, and capital lease assets where the present value of lease payments is greater than the fair value of the leased asset.

Revenues The Company's natural gas is sold primarily to interstate and intrastate natural-gas pipelines, direct end-users, industrial users, local distribution companies, and natural-gas marketers. Oil and condensate are sold primarily to marketers, gatherers, and refiners. NGLs are sold primarily to direct end-users, refiners, and marketers.

The Company recognizes sales revenues for natural gas, oil and condensate, and NGLs based on the amount of each product sold to purchasers when delivery to the purchaser has occurred and title has transferred. This occurs when product has been delivered to a pipeline or when a tanker lifting has occurred. The Company follows the sales method of accounting for natural-gas production imbalances. If the Company's sales volumes for a well exceed the Company's proportionate share of production from the well, a liability is recognized to the extent that the Company's share of estimated remaining recoverable reserves from the well is insufficient to satisfy this imbalance. No receivables are recorded for those wells on which the Company has taken less than its proportionate share of production.

Anadarko provides gathering, processing, treating, and transporting services pursuant to a variety of contracts. Under these arrangements, the Company receives fees, or retains a percentage of products or a percentage of the proceeds from the sale of products and recognizes revenue at the time the services are performed or product is sold. These revenues are included in gathering, processing, and marketing sales in the Consolidated Statements of Income.

Marketing margins related to the Company's production are included in natural-gas sales, oil and condensate sales, and NGLs sales. Marketing margins related to sales of commodities purchased from third parties and gains and losses on derivatives related to such marketing activities are included in gathering, processing, and marketing sales in the Consolidated Statements of Income.

The Company enters into buy/sell arrangements related to the transportation of a portion of its oil production. Under these arrangements, barrels are sold to a third party at a location-based contract price and subsequently repurchased by the Company at a downstream location. The difference in value between the sale and purchase price represents the transportation fee from the lease or certain gathering locations to more liquid markets. These arrangements are often required by private transporters. These transactions are reported on a net basis and included in oil and gas transportation in the Consolidated Statements of Income.

Cash Equivalents The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents.

EXHIBIT 2

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2016
or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to
Commission File No. 1-8968

ANADARKO PETROLEUM CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**76-0146568**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1201 Lake Robbins Drive, The Woodlands, Texas	**77380-1046**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(832) 636-1000**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.10 per share	New York Stock Exchange
7.50% Tangible Equity Units	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the Company's common stock held by non-affiliates of the registrant on June 30, 2016, was $27.3 billion based on the closing price as reported on the New York Stock Exchange.

The number of shares outstanding of the Company's common stock at February 3, 2017, is shown below:

Title of Class	Number of Shares Outstanding
Common Stock, par value $0.10 per share	558,979,551

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ANADARKO PETROLEUM CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2016, 2015, AND 2014

1. Summary of Significant Accounting Policies

General Anadarko Petroleum Corporation is engaged in the exploration, development, production, and marketing of oil, natural gas, and NGLs, and in the marketing of anticipated production of LNG. In addition, the Company engages in the gathering, processing, treating, and transporting of oil, natural gas, and NGLs. The Company also participates in the hard-minerals business through royalty arrangements.

Basis of Presentation The consolidated financial statements have been prepared in conformity with GAAP. Certain prior-period amounts have been reclassified to conform to the current-year presentation.

The consolidated financial statements include the accounts of Anadarko and subsidiaries in which Anadarko holds, directly or indirectly, more than 50% of the voting rights and VIEs for which Anadarko is the primary beneficiary. All intercompany transactions have been eliminated. Undivided interests in oil and natural-gas exploration and production joint ventures are consolidated on a proportionate basis. Investments in noncontrolled entities, over which Anadarko has the ability to exercise significant influence over operating and financial policies, and VIEs for which Anadarko is not the primary beneficiary are accounted for using the equity method. In applying the equity method of accounting, the investments are initially recognized at cost, and subsequently adjusted for the Company's proportionate share of earnings, losses, and distributions. Other investments are carried at original cost. Investments accounted for using the equity method and cost method are included in other assets.

Use of Estimates The preparation of financial statements in accordance with GAAP requires management to make informed judgments and estimates that affect the reported amounts of assets, liabilities, revenues, and expenses. Management evaluates its estimates and related assumptions regularly, including those related to proved reserves; the value of properties and equipment; goodwill; intangible assets; AROs; litigation liabilities; environmental liabilities; pension assets, liabilities, and costs; income taxes; and fair values. Changes in facts and circumstances or additional information may result in revised estimates, and actual results may differ from these estimates.

Fair Value Fair value is defined as the price that would be received to sell an asset or the price paid to transfer a liability in an orderly transaction between market participants at the measurement date. Inputs used in determining fair value are characterized according to a hierarchy that prioritizes those inputs based on the degree to which they are observable. The three input levels of the fair-value hierarchy are as follows:

Level 1—Inputs represent unadjusted quoted prices in active markets for identical assets or liabilities (for example, exchange-traded futures contracts for which parties are willing to transact at the exchange-quoted price).

Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly (for example, quoted market prices for similar assets or liabilities in active markets or quoted market prices for identical assets or liabilities in markets not considered to be active, inputs other than quoted prices that are observable for the asset or liability, or market-corroborated inputs).

Level 3—Inputs that are not observable from objective sources such as the Company's internally developed assumptions used in pricing an asset or liability (for example, an estimate of future cash flows used in the Company's internally developed present value of future cash flows model that underlies the fair-value measurement).

EXHIBIT 3

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549

FORM 10-Q

(Mark One)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2017
or

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission File No. 1-8968

ANADARKO PETROLEUM CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**76-0146568**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1201 Lake Robbins Drive, The Woodlands, Texas	**77380-1046**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(832) 636-1000**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The number of shares outstanding of the Company's common stock at April 19, 2017, is shown below:

Title of Class	Number of Shares Outstanding
Common Stock, par value $0.10 per share	560,339,140

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4. Impairments

Impairments of Long-Lived Assets Impairments of long-lived assets are included in impairment expense in the Company's Consolidated Statements of Income. The following summarizes impairments of long-lived assets and the related post-impairment fair values by segment:

	Three Months Ended	
millions	**Impairment**	**Fair Value** (1)
March 31, 2017		
Oil and gas exploration and production		
Gulf of Mexico properties	**$ 204**	**$ 231**
Midstream	**169**	**49**
Total	**$ 373**	**$ 280**

(1) Measured as of the impairment date using the income approach and Level 3 inputs. The primary assumptions used to estimate undiscounted future net cash flows include anticipated future production, commodity prices, and capital and operating costs.

Impairments during the three months ended March 31, 2017, were primarily related to oil and gas properties in the Gulf of Mexico due to lower forecasted commodity prices and a U.S. onshore midstream property due to a reduced throughput fee as a result of a producer's bankruptcy.

Impairments of Unproved Properties Impairments of unproved properties are included in exploration expense in the Company's Consolidated Statements of Income. The Company recognized $532 million of impairments of unproved Gulf of Mexico properties during the three months ended March 31, 2017, of which $467 million related to the Shenandoah project. The unproved property balance related to the Shenandoah project originated from the purchase price allocated to Gulf of Mexico exploration projects from the acquisition of Kerr-McGee Corporation in 2006. For additional details on the Shenandoah project, see *Note 5—Suspended Exploratory Well Costs*.

Potential for Future Impairments

Oil price sensitivity At March 31, 2017, the Company's estimate of undiscounted future cash flows attributable to certain asset groups, primarily related to international and offshore properties, with a combined net book value of approximately $2.7 billion indicated that the carrying amounts were expected to be recovered; however, these asset groups may be at risk for impairment if the estimates of future cash flows decline. The Company estimates that a 10% decline in oil prices (with all other assumptions unchanged) could result in non-cash impairments in excess of $1.0 billion.

Natural-gas price sensitivity At March 31, 2017, the Company's estimate of undiscounted future cash flows attributable to certain U.S. onshore asset groups with a combined net book value of approximately $1.3 billion indicated that the carrying amounts were expected to be recovered; however, these asset groups may be at risk for impairment if the estimates of future cash flows decline. The Company estimates that a 10% decline in natural-gas prices (with all other assumptions unchanged) could result in non-cash impairments in excess of $500 million.

It is also reasonably possible that significant declines in commodity prices, further changes to the Company's drilling plans in response to lower prices, reduction of proved and probable reserve estimates, or increases in drilling or operating costs could result in other additional impairments.

ANADARKO PETROLEUM CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

5. Suspended Exploratory Well Costs

The Company's suspended exploratory well costs were $1.1 billion at March 31, 2017, and $1.2 billion at December 31, 2016. Projects with suspended exploratory well costs include wells that have sufficient reserves to justify completion as a producing well and sufficient progress is being made in assessing the reserves and the economic and operating viability of the project. If additional information becomes available that raises substantial doubt as to the economic or operational viability of any of these projects, the associated costs will be expensed at that time.

During the three months ended March 31, 2017, the Company expensed suspended exploratory well costs of $435 million related to the Shenandoah project in the Gulf of Mexico, including $267 million previously capitalized for a period greater than one year. The Shenandoah-6 appraisal well and subsequent sidetrack, which completed appraisal activities in April 2017, did not encounter the oil-water contact in the eastern portion of the field. Given the results of this well and the present commodity-price environment, the Company has currently suspended further appraisal activities. Accordingly, the Company determined that the Shenandoah project no longer satisfies the accounting requirements for the continued capitalization of the exploratory well costs.

6. Current Liabilities

Accounts Payable Accounts payable, trade included liabilities of $290 million at March 31, 2017, and $262 million at December 31, 2016, representing the amount by which checks issued but not presented to the Company's banks for collection exceeded balances in applicable bank accounts. Changes in these liabilities are classified as cash flows from financing activities.

Other Current Liabilities The following summarizes the Company's other current liabilities:

millions	**March 31, 2017**	December 31, 2016
Accrued income taxes	**$ 671**	$ 6
Interest payable	**161**	244
Production, property, and other taxes payable	**253**	239
Accrued employee benefits	**185**	355
Other	**213**	393
Total other current liabilities	**$ 1,483**	$ 1,237

EXHIBIT 4

Financial Accounting Standards Board

ORIGINAL PRONOUNCEMENTS

AS AMENDED

Statement of Financial Accounting Concepts No. 6

Elements of Financial Statements

a replacement of FASB Concepts Statement No. 3 (incorporating an amendment of FASB Concepts Statement No. 2)

"other entities," or "entities other than the enterprise," which may include individuals, business enterprises, not-for-profit organizations, and the like. For example, employees, suppliers, customers or beneficiaries, lenders, stockholders, donors, and governments are all "other entities" to a particular entity. A subsidiary company that is part of the same entity as its parent company in consolidated financial statements is an "other entity" in the separate financial statements of its parent.[17]

Assets

25. Assets are probable[18] future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

Characteristics of Assets

26. An asset has three essential characteristics: (a) it embodies a probable future benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows, (b) a particular entity can obtain the benefit and control others' access to it, and (c) the transaction or other event giving rise to the entity's right to or control of the benefit has already occurred. Assets commonly have other features that help identify them—for example, assets may be acquired at a cost[19] and they may be tangible, exchangeable, or legally enforceable. However, those features are not essential characteristics of assets. Their absence, by itself, is not sufficient to preclude an item's qualifying as an asset. That is, assets may be acquired without cost, they may be intangible, and although not exchangeable they may be usable by the entity in producing or distributing other goods or services. Similarly, although the ability of an entity to obtain benefit from an asset and to control others' access to it generally rests on a foundation of legal rights, legal enforceability of a claim to the benefit is not a prerequisite for a benefit to qualify as an asset if the entity has the ability to obtain and control the benefit in other ways.

27. The kinds of items that qualify as assets under the definition in paragraph 25 are also commonly called economic resources. They are the scarce means that are useful for carrying out economic activities, such as consumption, production, and exchange.

28. The common characteristic possessed by all assets (economic resources) is "service potential" or "future economic benefit," the scarce capacity to provide services or benefits to the entities that use them. In a business enterprise, that service potential or future economic benefit eventually results in net cash inflows to the enterprise. In a not-for-profit organization, that service potential or future economic benefit is used to provide desired or needed goods or services to beneficiaries or other constituents, which may or may not directly result in net cash inflows to the organization. Some not-for-profit organizations rely significantly on contributions or donations of cash to supplement selling prices or to replace cash or other assets used in providing goods or services. The relationship between service potential or future economic benefit of its assets and net cash inflows to an entity is often indirect in both business enterprises and not-for-profit organizations.

29. Money (cash, including deposits in banks) is valuable because of what it can buy. It can be exchanged for virtually any good or service that is available or it can be saved and exchanged for them in the future. Money's "command over resources"—its purchasing power—is the basis of its value and future economic benefits.[20]

30. Assets other than cash benefit an entity by being exchanged for cash or other goods or services, by being used to produce goods or services or otherwise

[17]The concept of a "reporting entity" for general-purpose external financial reporting is the subject of a separate Board project that includes consolidated financial statements, the equity method, and related matters.

[18]*Probable* is used with its usual general meaning, rather than in a specific accounting or technical sense (such as that in FASB Statement No. 5, *Accounting for Contingencies,* par. 3), and refers to that which can reasonably be expected or believed on the basis of available evidence or logic but is neither certain nor proved (*Webster's New World Dictionary of the American Language,* 2d college ed. [New York Simon and Schuster 1982], p. 1132). Its inclusion in the definition is intended to acknowledge that business and other economic activities occur in an environment characterized by uncertainty in which few outcomes are certain (pars. 44–48).

[19]*Cost* is the sacrifice incurred in economic activities—that which is given up or forgone to consume, to save, to exchange, to produce, and so forth. For example, the value of cash or other resources given up (or the present value of an obligation incurred) in exchange for a resource measures the cost of the resource acquired. Similarly, the expiration of future benefits caused by using a resource in production is the cost of using it.

[20]Money's command over resources, or purchasing power, declines during periods of inflation and increases during periods of deflation (increases and decreases, respectively, in the level of prices in general). Since matters of measurement, including unit of measure, are beyond the scope of this Statement, it recognizes but does not emphasize that characteristic of money.

EXHIBIT 5

Assets

360 Property, Plant, and Equipment

360 Property, Plant, and Equipment 10 Overall

00 Status

General Note:The Status Section identifies changes to this Subtopic resulting from Accounting Standards Updates. The Section provides references to the affected Codification content and links to the related Accounting Standards Updates. Nonsubstantive changes for items such as editorial, link and similar corrections are included separately in Maintenance Updates.

Status

360-10-00-1 The following table identifies the changes made to this Subtopic.

Paragraph	Action	Accounting Standards Update	Date
Business	Amended	Accounting Standards Update No. 2017-01	01/05/2017
Business	Added	Accounting Standards Update No. 2014-09	05/28/2014
Collections	Added	Accounting Standards Update No. 2019-03	03/21/2019
Contract	Added	Accounting Standards Update No. 2014-09	05/28/2014
Customer	Added	Accounting Standards Update No. 2014-09	05/28/2014
Disposal Group	Amended	Accounting Standards Update No. 2014-08	04/10/2014
Lease	Added	Accounting Standards Update No. 2016-02	02/25/2016
Lease Term	Added	Accounting Standards Update No. 2016-02	02/25/2016
Lessee	Added	Accounting Standards Update No. 2016-02	02/25/2016
Lessor	Added	Accounting Standards Update No. 2016-02	02/25/2016
Net Realizable Value	Added	Accounting Standards Update No. 2015-11	07/22/2015
Nonprofit Activity	Added	Accounting Standards Update No. 2014-09	05/28/2014
Not-for-Profit Entity	Added	Accounting Standards Update No. 2014-08	04/10/2014
Performance Obligation	Added	Accounting Standards Update No. 2016-02	02/25/2016
Public Business Entity	Amended	Maintenance Update 2017-06	04/07/2017
Public Business Entity	Amended	Maintenance Update 2016-11	06/27/2016
Public Business Entity	Added	Accounting Standards Update No. 2014-08	04/10/2014
Revenue	Added	Accounting Standards Update No. 2016-02	02/25/2016
Right-of-Use Asset	Added	Accounting Standards Update No. 2016-02	02/25/2016
Underlying Asset	Added	Accounting Standards Update No. 2016-02	02/25/2016
360-10-05-1	Amended	Accounting Standards Update No. 2016-02	02/25/2016
360-10-05-1	Amended	Accounting Standards Update No. 2014-09	05/28/2014
360-10-05-4	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-05-5	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-15-4	Amended	Accounting Standards Update No. 2016-02	02/25/2016
360-10-15-6	Added	Accounting Standards Update No. 2019-03	03/21/2019

360-10-30-8	Amended	Accounting Standards Update No. 2016-02	02/25/2016
360-10-35-7	Amended	Accounting Standards Update No. 2014-09	05/28/2014
360-10-35-39	Amended	Accounting Standards Update No. 2012-04	10/01/2012
360-10-35-41	Amended	Accounting Standards Update No. 2022-02	03/31/2022
360-10-40-1	Superseded	Accounting Standards Update No. 2014-09	05/28/2014
360-10-40-2	Amended	Accounting Standards Update No. 2017-05	02/22/2017
360-10-40-2	Amended	Accounting Standards Update No. 2016-02	02/25/2016
360-10-40-2	Amended	Accounting Standards Update No. 2014-09	05/28/2014
360-10-40-3	Superseded	Accounting Standards Update No. 2014-09	05/28/2014
360-10-40-3A	Amended	Accounting Standards Update No. 2017-05	02/22/2017
360-10-40-3B	Amended	Accounting Standards Update No. 2017-05	02/22/2017
360-10-40-3A through 3C	Added	Accounting Standards Update No. 2014-09	05/28/2014
360-10-40-5	Amended	Accounting Standards Update No. 2017-05	02/22/2017
360-10-45-3	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-45-5	Amended	Accounting Standards Update No. 2014-09	05/28/2014
360-10-45-5	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-45-14	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-45-15	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-50-3	Amended	Accounting Standards Update No. 2014-08	04/10/2014
360-10-50-3A	Added	Accounting Standards Update No. 2014-08	04/10/2014
360-10-50-4	Added	Accounting Standards Update No. 2014-04	01/17/2014
360-10-55-18A	Added	Accounting Standards Update No. 2014-08	04/10/2014
360-10-55-21	Amended	Accounting Standards Update No. 2015-11	07/22/2015
360-10-55-43	Amended	Accounting Standards Update No. 2016-02	02/25/2016
360-10-55-50 through 55-54	Added	Accounting Standards Update No. 2012-04	10/01/2012
360-10-60-1	Amended	Accounting Standards Update No. 2014-09	05/28/2014

05 Overview and Background

General Note:The Overview and Background Section provides overview and background material for the guidance contained in the Subtopic. It does not provide the historical background or due process. It may contain certain material that users generally consider useful to understand the typical situations addressed by the standards. The Section does not summarize the accounting and reporting requirements.

General

360-10-05-1 The Property, Plant, and Equipment Topic includes the following Subtopics:

a. Overall

b. Real Estate Sales—Sale-Leaseback Accounting.

PENDING CONTENT

Transition Date: P December 16, 2018; N December 16, 2021 | **Transition Guidance:** 842-10-65-1

The Property, Plant, and Equipment Topic includes the following Subtopic:

a. Overall

360-10-35-11 See paragraphs 250-10-45-17 through 45-20 for guidance on the accounting and presentation of changes in methods of depreciation.

360-10-35-12 Paragraph not used.

> Adjusting the Residual Value in Leased Assets by a Third Party

360-10-35-13 The following paragraph provides guidance on how an entity acquiring an interest in the residual value of a leased asset shall account for that asset during the lease term.

360-10-35-14 An entity acquiring an interest in the residual value of any leased asset, irrespective of the classification of the related lease by the lessor, shall not recognize increases to the asset's estimated value over the remaining term of the related lease, and the asset shall be reported at no more than its acquisition cost until sale or disposition. If it is subsequently determined that the fair value of the residual value of a leased asset has declined below the carrying amount of the acquired interest and that decline is other than temporary, the asset shall be written down to fair value, and the amount of the write-down shall be recognized as a loss. That fair value becomes the asset's new carrying amount, and the asset shall not be increased for any subsequent increase in its fair value before its sale or disposition.

Impairment or Disposal of Long-Lived Assets

360-10-35-15 There are unique requirements of accounting for the impairment or disposal of long-lived assets to be held and used or to be disposed of. Although this guidance deals with matters which may lead to the ultimate disposition of assets, it is included in this Subsection because it describes the measurement and classification of assets to be held and used and assets held for disposal before actual disposition and derecognition. See the Impairment or Disposal of Long-Lived Assets Subsection of Section 360-10-40 for a discussion of assets or asset groups for which disposition has taken place in an exchange or distribution to owners.

> Long-Lived Assets Classified as Held and Used

360-10-35-16 This guidance addresses how long-lived assets or asset groups that are intended to be held and used in an entity's business shall be reviewed for impairment.

· > Measurement of an Impairment Loss

360-10-35-17 An impairment loss shall be recognized only if the carrying amount of a long-lived asset (asset group) is not recoverable and exceeds its fair value. The carrying amount of a long-lived asset (asset group) is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset (asset group). That assessment shall be based on the carrying amount of the asset (asset group) at the date it is tested for recoverability, whether in use (see paragraph 360-10-35-33) or under development (see paragraph 360-10-35-34). An impairment loss shall be measured as the amount by which the carrying amount of a long-lived asset (asset group) exceeds its fair value.

· · > Assets Subject to Asset Retirement Obligations

360-10-35-18 In applying the provisions of this Subtopic, the carrying amount of the asset being tested for impairment shall include amounts of capitalized asset retirement costs. Estimated future cash flows related to the liability for an asset retirement obligation that has been recognized in the financial statements shall be excluded from both of the following:

a. The undiscounted cash flows used to test the asset for recoverability
b. The discounted cash flows used to measure the asset's fair value.

EXHIBIT 6

Capital One Securities, Inc.

February 2, 2015

Morning Energy Summary

Please see important disclosures and analyst certification on page 4 of this report.

OS Focus List & Relative Bias Index

This week's Focus List (in alphabetical order): BHI, NBR, PTEN, SLB. **Moving out of Focus List:** none. **Other movers up in Relative Bias:** None. **Other movers down in Relative Bias:** FET: We still would be long in the mid-teens given how disproportionately this name has been punished, but nudging lower w/ CAM's order weakness portending even more estimate cutting. **Other commentary:** CAM, NOV. CAM: First OEM out of the gate didn't improve our lack of appetite for the sub-sector w/ drop-off in Drilling base orders in 4Q swifter than anticipated. NOV: Another look at an OEM bellwether this week. Rig Systems margin, onshore base order flow w/in Rig Systems, and aftermarket outlook (or lack thereof) will be of most interest. (Gibney/Lemoine)

GDP: Guidance Follow-Up

$2.52, EQUALWEIGHT, $7.00 Target

Cutting NAV est to $7 from $10 and significantly cutting 2015 - 2017 EBITDA/CFPS ests following reduced CAPEX and production guidance issued Friday before market open (for full details, please click here for our Friday note). We believe the CAPEX cut is necessary and rational given the need to preserve liquidity first and foremost in the current weak pricing environment. However, as we pointed out, the spending cut has an adverse impact on GDP's production profile and thus its ability to generate EBITDA & cash flow. This has the somewhat counter-intuitive effect of actually increasing the company's financial leverage ratio b/c projected 2015 EBITDA declines more than projected YE15 net debt on a percentage basis. *More below.* (Johnston)

OII: C&C Acquisition

$52.36, EQUALWEIGHT, $66.00 Target

OII acquiring privately-held, LA-based survey services provider C&C Technologies for $230MM in cash. Transaction expected to close in April '15 and generate $20MM - $30MM in EBITDA (10c - 15c EPS) on an annualized run rate. OII closed 3Q14 w/ $75MM in cash ($201MM spent on share repurchases in 3Q). C&C will fold into the Subsea Projects division w/ its primary service offering driven by ocean-bottom mapping services and offshore marine construction surveys along w/ onshore/near-shore survey services in the GOM/Mexico and shallow water geophysical survey services in the GOM. Builds on a broader life-of-field strategy for OII w/ primary pull through opportunity for pipeline repair and tooling. No adjustments to ests as we await 4Q earnings. '15 guidance ($4.10 - $4.50) will be updated on 4Q release to account for new share count, $500MM sr notes issuance, and weakening offshore market. An orientation ~$4 EPS (particularly w/ this acquisition providing more buffer) continues to seem likely. Still find the name a defensive one to play in the near term w/ the prospect for still achieving modest '15 y/y growth along w/ favorable balance sheet/ROC screen, but upside still looks capped in mid $60s as the company shifts into materially slower growth prospects and its historical multiple dole out needs to be controlled. (Gibney)

REI: Lowering Estimates to Reflect Drilling Curtailment

$9.12, OVERWEIGHT, $13.00 Target

2015 production & CFPS estimates decline to 2.3 Mboe/d & 77c from 3.3 Mboe/d & $1.31 following REI's announcement late last week that it had reduced its rig count to zero as the company waits for oil prices to stabilize. Our target price drops $1 to $13 on the drilling slowdown. We model REI resuming drilling ops in 2Q and lowered estimated 2015 CAPEX to $35MM from $56MM previously (with production expected to grow 78% y/y this year). REI is well positioned to wait out a short-term drilling curtailment given it had zero net debt at 3Q14, and we estimate that it exited 2014 with ~$40MM in liquidity. We also look for the company to pursue Central Basin Platform acquisitions. (Tullis)

SN 4Q Production and YE14 Reserves

$11.14, OVERWEIGHT, $17.00 Target

Mixed bag w/ solid 4Q14 and current production, but lower oil cut continues to concern us. 4Q production was 43.9 Mboe/d, which was 3% above the Street's 42.7 Mboe/d estimate, slightly below our 44 Mboe/d estimate, and towards the high end of company guidance of 40 - 44 Mboe/d. Although 4Q production was in line, the oil cut was lower than expected coming in at 45% oil vs company guidance of 46% oil and our 47% oil estimate. Similarly, in 3Q the oil cut was 47% vs company guidance of 49%. Our 4Q EPS/CFPS estimates decrease from (14c)/$1.71 to (19c)/$1.63. FY14 production grew 188% y/y to 30.5 Mboe/d, or 2% above the midpoint of SN's FY14 guidance of 29 - 31 Mboe/d. Proved reserves at YE14 increased 129% y/y to 134.8 MMboe. On the operations side, SN provided current production of 43 Mboe/d, well within the 1Q15 production guidance range of 40 – 44 Mboe/d and in line with Street/COS estimates of 43.8/43.5 Mboe/d. In Catarina, well costs are running $5MM (in line with our model), and management expects continued cost savings in the coming months. SN reaffirmed its 2015 plans to dedicate 3.5 net rigs to Catarina and Palmetto and 0.25 net rigs to TMS. No change to 1Q15 and FY15 guidance. (Johnston)

E&P: What Oil & Gas Prices Are Stocks Currently Discounting?

Capital One Securities, Inc.

Morning Energy Summary

We estimate that our oily coverage group is currently pricing in ~$68.10/bbl held flat forever vs NYMEX oil strip prices of ~$55/bbl in 2015, ~$58 in 2016, ~$65 in 2017, and a range of ~$66 - $70 in 2018 and beyond. We estimate that our gassy coverage group is currently pricing in ~$3.10/Mcf held flat forever vs NYMEX gas strip prices of ~$2.88/Mcf in 2015, ~$3.10 in 2016, ~$3.56 in 2017, and a range of ~$3.89 - $4.35 in 2018 and beyond. On average, our E&P group has ~51% upside to our NAV estimates at our current price deck (vs ~45% avg upside to FactSet consensus NAVs). Our WTI oil price deck is $60/bbl in 2015, $60/bbl in 2016, and $75/bbl in 2017 and beyond. Our Henry Hub natural gas price deck is $3.50/Mcf in 2015, $3.50/Mcf in 2016, and $4.00/Mcf in 2017 and beyond. Names with >50% upside potential include AR, CIE, CRK, ECR, GDP, HK, MHR, PQ, REI, REN, REXX, RICE, ROSE, SM, SN, SWN, UNT, UPL, WLL, WPX, and WTI. Names with the most upside potential generally have higher financial leverage, so more implied risk w/ the greater reward. (E&P Team)

Shenandoah Appraisal Well Dry: Implications for APC/CIE/MRO

ConocoPhillips reported last Thurs that the 2nd appraisal well at Shenandoah was a dry hole (APC 30% WI and operator, COP 30% WI, CIE 20% WI, MRO 10% WI, Venari Resources 10% WI). Shenandoah is considered to be potentially one of the biggest deepwater GOM fields ever discovered, so the news came as a disappointment. The well is located in Walker Ridge Block 52 roughly 2 ½ miles east and structurally down-dip from the first appraisal well (Shenandoah-2, which logged >1,000 net ft of high-quality Lower Tertiary oil pay in March '13) and to the south/southeast of the original 2009 discovery well (which logged ~300 ft of oil pay). The unsuccessful well likely condemns at least some of the southeastern flank of the structure's aerial extent. Operator APC will next drill a 3rd appraisal well to test the western flank. We have been carrying Shenandoah as a 1 billion boe discovery in our APC model (300 MMboe net to APC's 30% WI, worth ~$3.6B or ~$7 per share). While it still could ultimately be that large, we think it's prudent to cut our resource estimate in half for now to 500 MMboe. We are thus cutting our NAV by $3 to $99. From CIE's perspective, our target actually increases by $1 to $17 as we upsize the gross reserves estimate for Shenandoah to 500 Mboe (were previously using a more heavily risked ~250 MMboe given CIE's more limited project development resources). From MRO's perspective, no change to our $31 NAV as the delta amounts to rounding error. We estimate 50 MMboe net to MRO's 10% WI is worth ~$600MM, or ~$0.85 per share. (E&P Team)

Weekly Rig Count Snapshot

For the week ended 1/30/2015, BHI -87, RigData -25. BHI oil counts w/w were -89 (-5 directional, -67 horizontal, -17 vertical). Gas counts w/w were +2 (+1 directional, +5 horizontal, -4 vertical). Rig Data oil counts w/w were -35 (-3 directional, -29 horizontal, -3 vertical). Rig Data gas counts w/w were +10 (+1 directional, +9 horizontal, +0 vertical). Per RigData, w/w changes were as follows: Appalachia Area +3, Williston -11, Niobrara -1, Delaware Basin -2, Midland Basin -7, Eagle Ford +3, Cana Woodford/SCOOP -3, Mississippian -5, Greater Granite Wash -4, Barnett +1, Cotton Valley +0, Fayetteville +0, Haynesville +1, California -1. (Lemoine)

Weekly Permit Snapshot

US land permits -75 w/w to 812 with Appalachia -19, Bakken +41, Niobrara -48, Permian -2, Eagle Ford -30, Cana Woodford/SCOOP +8, Mississippian +28, Greater Granite Wash -7, Barnett -1, Haynesville -15, and California -4. US land permits 4-week average +70 w/w to 913. US inland water permits +9 w/w to 13 with 4-week average -3 y/y to 12. Deepwater permits +0 w/w to 2 with 4-week average -1 y/y to 2. Shelf permits +2 w/w to 6 with 4-week average -1 y/y to 5. Please contact your COS salesperson for our full report. (Lemoine)

New Corporate Presentations

GDP – Management Presentation:
http://goodrichpetroleum.investorroom.com/download/MgmtCurrent.pdf

GDP – TMS Presentation:
http://goodrichpetroleum.investorroom.com/download/MgmtTMS.pdf

Interesting Articles

Here today, up tomorrow: Why gas prices may be on the rise – CNBC:
http://www.cnbc.com/id/102381893

Wall Street prepared for bad news from the energy companies, but so far it's been worse than expected – Business Insider:
http://www.businessinsider.com/r-energy-may-see-further-weakness-as-key-names-report-2015-1

GDP: Guidance Follow-Up, Continued

A Look at 2015 Cash Flows: At our prior $150MM CAPEX assumption for 2015, we were projecting 11.6 Mboe/d of production and ~$80MM in CF, implying a ~$70MM outspend. Based on our new ~$100MM CAPEX assumption, we now estimate 9.6 Mboe/d of production (18% lower) and ~$58MM in CF (28% lower), implying a ~$42MM funding gap. As a result, we project YE15 net debt will be ~$670MM, which is ~

$25MM lower than previously estimated, a 4% reduction. However, our 2015 EBITDA estimate falls by 17% to $114MM from $137MM. Our YE15 net debt/EBITDA forecast thus climbs to 5.9x from 5.1x previously. This would, of course, put GDP in violation of its max 4.0x covenant embedded w/in its senior credit facility. We would expect the bank group to relax or re-define this leverage ratio covenant in order to give GDP some near-term breathing room.

2016 Looks More Challenging: We think GDP can weather the storm this year. Oil hedges certainly help. Roughly ~2/3 of this year's expected oil production is swapped at an average NYMEX price of $96.11/bbl. Looking out into 2016, things look more challenging for GDP in a scenario where oil prices do not improve, as several factors are working against the company. First, all of those hedges roll off (GDP is unhedged on oil and gas next year). Second, production is expected to continue to decline based on our current $80MM CAPEX assumption (on $60/bbl price deck in 2016). We expect EBITDA will fall to levels that push the EBITDA/interest coverage ratio to below 1.5x. Third, we estimate net debt/LTM EBITDA will rise to ~11.0x by YE16 given the reduction in EBITDA. Finally, we project that GDP will exhaust its liquidity by the second half of 2016 based on our current assumptions. This assumes no change in GDP's $230MM borrowing base, which is likely somewhat optimistic given the current price environment. We note the company could always choose to further cut back its spending in order to stretch its liquidity further out. However, the production and cash flow ship eventually becomes more and more challenging to turn around the deeper the CAPEX cuts become.

Eagle Ford and TMS Update: Meanwhile, there has not been much movement on the Eagle Ford sale process given the weak price environment, so it has slipped to the right. A sale would significantly improve GDP's financial flexibility and liquidity. Regarding TMS, mgmt expects to announce results for the Kent 41H-1 well in conjunction w/ 4Q earnings. Preliminary indications are that the well was drilled for less than $12MM, and mgmt thinks TMS wells can be drilled for ~$10MM or less w/ leading-edge service costs rolled through. Drilling of the 2-well pad at CMR/Foster Creek 8H went smoothly, but completions are being deferred for now.

Capital One Securities, Inc.

Morning Energy Summary

Contacts

Pierre E. Conner III
Head of Institutional Sales, Research and Trading
pierre.conner@capitalone.com
(504) 593-6108

Oilfield Services

Luke M. Lemoine, CFA
Luke.Lemoine@capitalone.com
(504) 593-6174

Joseph D. G bney
joseph.gibney@capitalone.com
(713) 435-5385

Kelly N. Garis
kelly.garis@capitalone.com
(504) 593-6157

Exploration & Production

Richard Tullis
richard.tullis@capitalone.com
(504) 593-6118

Brian T. Velie
brian.velie@capitalone.com
(504) 593-6141

Phillips Johnston, CFA
phillips.johnston@capitalone.com
(504) 593-6163

Catherine Cusimano
catherine.cusimano@capitalone.com
(504) 593-6167

Nicole Roy
Nicole.Roy@capitalone.com
(504) 593-6169

Kyle May
kyle.may@capitalone.com
(504) 593-6168

Midstream

Charles Marshall
Charles.Marshall@capitalone.com
(713) 735-4977

Sales: 1-800-666-9174
Trading: 1-800-333-2005

Disclosures:

https://capitalonebank2.bluematrix.com/sellside/Disclosures.action

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EXHIBIT 7

Morgan Stanley | RESEARCH

UPDATE

October 11, 2016 04:27 AM GMT

Anadarko Petroleum Corp

Notes From The Road: Top Pick Affirmation

Stock Rat ng	Industry V ew	Pr ce Target
Overweight	Attractive	$88.00

We view APC as a core long into upcycle, offering top-tier growth at a rare discount to group. We have greater confidence in growth strategy, expectation of a more aggressive asset sale program, and lower execution risk in APC's Delaware due to WES infrastructure advantage.

Late last week we were on the road with APC's SVP and outgo ng head of R John Colglaz er and h s successor VP Rob n elder. nvestor quest ons revolved around deta ls of APC's growth strategy w th focus on Delaware's mm nent trans t on to full development (late 2017) the asset sales program and progress of recent GoM acqu s t on towards clos ng. Our takeaways were: (1) we bel eve APC's long-term o l growth target (10-12% on $50-60/bbl w th n cash) comes w th h gher cap tal eff c ency and lower execut on r sk due to hol st c Delaware development strategy and advantaged m dstream access (n part due to WES) (2) OPEC's product on cap puts a floor under commod ty l ft ng demand for assets and hence pr c ng and accelerat ng APC's asset sales (gu ded $1Bn ncremental by YE16) (3) we see low r sk of CX transact on not clos ng on or g nal terms by YE16 (cons stent w th the v ew of our Metals & M n ng team led by Evan Kurtz who covers CX). Other ncrementals nclude color on GoM explorat on and t eback potent al and Shenandoah development concept select on. or more deta led take-aways see ns de.

APC is our Top Pick among LargeCap E&Ps. APC has outperformed the LargeCap E&P group by 7.6pp s nce announc ng the transact on w th CX yet s st ll only a m d-range performer YTD (5th n a group of 10) and s lagg ng 10.7pp over the past 12mo. ts valuat on pro forma for the GoM acqu s t on s at 8.7x 2017 EB TDAX a half-turn d scount to the group vs half-turn average prem um over a 5-year per od wh ch ncluded Tronox and Macondo. We are conv nced APC w ll rega n ts h stor cal prem um g ven ts top-t er o l product on growth outlook dr ven largely by 255k net acre core TX Delaware pos t on nfrastructure advantage courtesy of WES cont nued super or operat ng performance and astute management of the asset portfol o. Asset sales (ncremental >$1.0Bn to YE16) h gh- mpact explorat on and what s l kely to be another robust quarter (reports 10/31 after close MS forecast of earn ngs per share loss of $0.58 n-l ne but we see ups de r sk) prov de catalysts nto year end.

We raise our PT 9% to $88/sh. Our PT s der ved from average of target mult ple and NAV approaches. The pr mary dr ver beh nd PT ra se s an ncrease n target

MORGAN S AN EY & CO C

Evan Ca o
EQU Y ANA YS
Evan Calio@morgans anley com + 2 2 76 6472

I ya Ba abanovsky
RESEARCH ASSOC A E
lya Balabanovsky@morgans anley com + 2 2 76 8530

Stephen Co a o
RESEARCH ASSOC A E
S ephen Colalillo@morgans anley com + 2 2 296 5250

Aaron Zhang
RESEARCH ASSOC A E
Aaron Zhang@morgans anley com + 2 2 296 5293

Anadarko Petroleum Corp (APC.N, APC US)

Large Cap Exploration & Production / **United States of America**

Stock Rating	**Overweight**
Industry View	**Attractive**
Price target	**$88.00**
Shr price, c ose (Oct 0, 20 6)	$64 39
Mkt cap, curr (mm)	$32,868
52 Week Range	$73 87 28 6

Fiscal Year Ending	**12/15**	**12/16e**	**12/17e**	**12/18e**
ModelWare EPS ($)	(2.00)	(2.87)	(0.49)	2.44
Prior ModelWare EPS ($)		(2.71)	(0.41)	2.55
P/E	NM	NM	NM	26.4
Consensus EPS ($)§	(2.52)	(2.74)	(0.11)	1.11
Div y d (%)	2 2	0 3	0 3	0 3

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework
§ = Consensus data is provided by Thomson Reuters Estimates
e = Morgan Stanley Research estimates

QUARTERLY MODELWARE EPS ($)

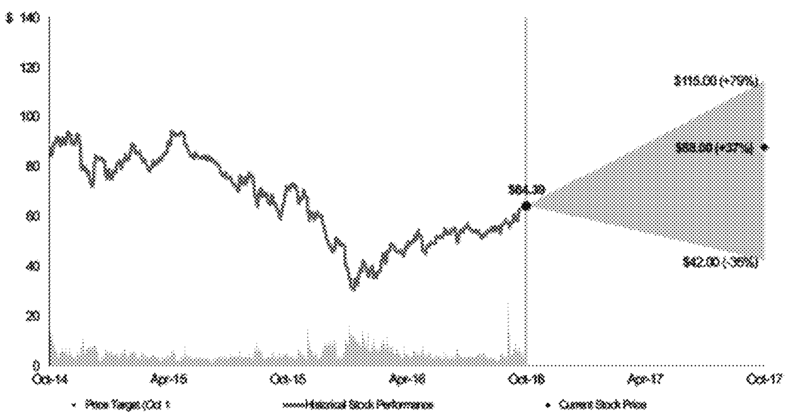
Quarter	2015	2016e Prior	2016e Current	2017e Prior	2017e Current
Q	(0 72)		(2)a		
Q2	0 0		(0 60)a		
Q3	(0 7)	(0 64)	(0 58)		
Q4	(0 58)	(0 38)	(0 59)		

e = Morgan Stanley Research estimates, a = Actual Company reported data

m d-cycle mult ple to LargeCap E&P peer-average 6.0x g ven cred t to APC's top t er growth outlook (albe t somewhat offset by nvestors' cont nued preference for US shale pureplays). On the NAV s de we: (1) remove 20% r sk ng from Shenandoah value g ven development concept select on supports our pos t ve v ew on resource s ze (2) lower Mozamb que Area 1 r sk ng to 25% (vs. h stor cal comps) g ven more support ve asset market and (3) mark to market stakes n WGP and WES at h gher levels s nce last update.

Anadarko Petroleum Corp. (APC, OW, PT $88/sh)

Attractive valuation creates favorable risk/reward profile



Source: Thomson Reuters; Morgan Stanley Research

Price Target $88

Our $88/sh price target is based on the average of our $87/sh risked NAV estimate and $90/sh price based on 6.0x EV target multiple applied to time-discounted 2019E estimate EBITDAX. The target multiple is in line with LargeCap E&P group average. APC currently trades at 8.7x 2017E EV/EBITDAX vs. globally diversified peers at 9.4x, but we believe that an in-line valuation is warranted given top-tier growth outlook. In our estimated NAV, we risk our valuation of Mozambique Area 1 at 25% relative to historical transaction price (sale to ONGC in Aug 2013) and risk Itaipu at 50%. Interest in WGP and direct interest in WES marked to market as of 10/10/2016 close. Our PT implies a 10.0x 2017E forward EV/EBITDAX.

Bull $115

12.5x Bull Case 2015E EBITDAX

Long-term (2019+) base price deck: $90/bbl Brent, $87/bbl WTI, $4.50 HH. mpact of h gher commod ty deck part ally offset by greater O S cost nflat on and some eff c ency d lut on relat ve to Base Case.

Base $88

10.0x Base Case 2017E EBITDAX

Long-term (2019+) base price deck: $80/bbl Brent, $77/bbl WTI, $3.75 HH. We assume APC surrenders some of the downcycle O S pr c ng and eff c ency ga ns as pr ces step change from Str p (2016-18) to m d-cycle.

Bear $42

6.7x Bear Case 2017E EBITDAX

Long-term (2019+) base price deck: $60/bbl Brent, $57/bbl WTI, $3.00 HH. mpact of lower commod ty deck part ally m t gated by lower O S pr ces and h gher eff c ency ga ns relat ve to Base Case yet exacerbated by lower act v ty levels deferr ng value.

Investment Thesis

- APC offers top-t er growth (10-12% o l CAGR to 2020) wh le spend ng w th n cash on $50-60/bbl
- Currently trades at a rare half-turn d scount to group on 2017 EV/EB TDAX vs. half-turn average prem um over a 5-year per od
- Largest core Perm an Delaware pos t on among LargeCap E&Ps at 255k net acres
- Advantaged nfrastructure access and fund ng ab l ty v a WES

Key Value Drivers

- H ghly accret ve GoM acqu s t on prov des recycled funds to accelerate Delaware act v ty
- Asset sales could prov de cap tal to further accelerate Delaware act v ty and/or add acreage

Potential Catalysts

- Asset sales (>$1.0bn by YE16 w th program cont nu ng nto 2017 l kely cand dates are Eagle ord Marcellus and Mozamb que).
- H gh mpact explorat on (Warr or (GoM) and Purple Angel block (Columb a) w ldcats Shenandoah 6 and Phobos 2 appra sals)
- 3Q16 earn ngs l kely released on 10/31 (we are n l ne w th Consensus on EPS at ($0.58) vs. ($0.55) but see ups de r sk on better than gu ded opex)

Risks to Achieving Price Target

- Commod ty pr ces (relat vely greater US nat gas pr ce exposure)
- Operat onal execut on (lower than peer on l ke-for-l ke asset bas s yet h gher overall due to greater deepwater exposure)
- O S pr ce r sk
- Explorat on r sk (h gher than average g ven broad pullback from w ldcatt ng by peers)

Top Pick Affirmation

What's Different?

- The APC equ ty story has been s gn f cantly streaml ned w th funded growth dr ven by portfol o's 3-Ds - Delaware DJ and shorter-cycle Deep-water (largely GoM). Growth s bu lt on top of a cap tal-eff c ent base (wh ch s tasked w th keep ng ts volumes flat wh le supply ng C to fund 3-D act v ty).

- APC was play ng defense over late 2014 to m d-2016. Management focused on asset sales balance sheet cred t prof le and cash flows a necess ty n the context of challeng ng crude and natural gas pr ce outlooks wh ch preva led dur ng the per od.

- APC has now reverted to play ng offense. The move s not pred cated on a s gn f cant commod ty pr ce mprovement. The contrar an h ghly accret ve GoM acqu s t on enables a step change n o l growth outlook leverage rat os and o l exposure by prov d ng cash flow to be recycled nto an mprov ng Delaware bas n asset. Mult -year growth w th n cash n a $50-60/bbl world has become the standard by wh ch E&Ps are measured. Retooled APC answers w th top-t er 10-12% o l CAGR on $50-60/bbl. APC's WES ownersh p and s gn f cant cap tal spend ng n Delaware also reduce the m dstream r sk assoc ated w th future growth vs. peers.

- urther asset rat onal zat ons prov de ups de opt onal ty whether non-core US (everyth ng outs de the 3-Ds and potent ally even T er 2-3 areas w th n the 3-Ds) or nternat onal (Mozamb que potent al).

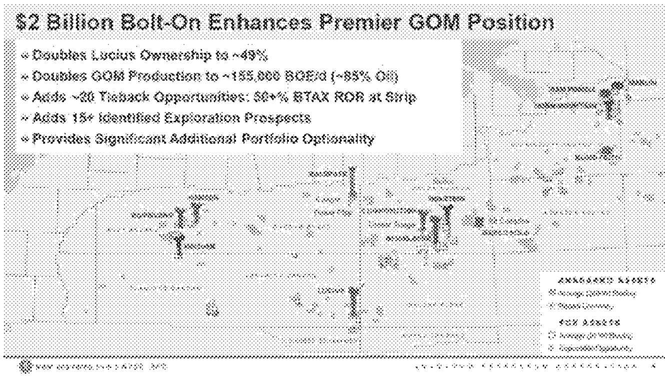
FCX Transaction

- or our take on the transact on at the t me of announcement see Anadarko Petroleum Corp: M n ng ull-Cycle Value (13 Sep 2016)

- APC expects the transact on w ll close n 4Q16 and does not see potent al CX bondholder ssues mpact ng CX's ab l ty to del ver the assets free and clear.

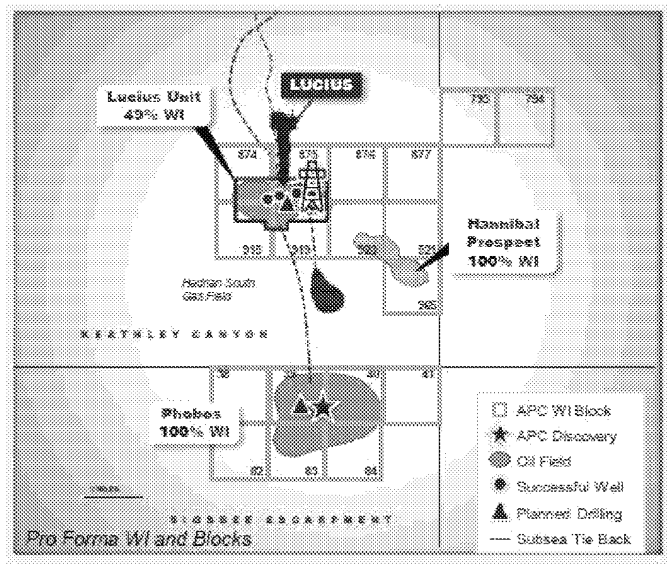
- Deal was dr ven by APC's des re to ncrease stake n Luc us (to 48.95% from 23.83% pre-deal). As operator APC had d rect ns ghts nto the project and ra sed recoverable resource est mate (n connect on w th acqu s t on) to 400+MMboe from 300+MMboe. Luc us s produc ng above 100Mbld from 6 wells compared to 80Mbld fac l ty nameplate (thanks to much lower than expected watercut). APC bel eves t can leverage Luc us nfrastructure for decades w th 3-7 add t onal wells tapp ng the namesake reservo r and further ups de from surround ng t e-backs (Phobos Hann bal) and toll ng of th rd-party volumes (XOM's Hadr an North). Overall APC pa d a low pr ce for low-r sk proved reserves and t e back potent al. No value ascr bed for 3P or explorat on w th 91 blocks transferred and 2 dr llable prospects (15+ dent f ed prospects overall).

Exhibit 1: APC's GoM Asset Portfo o Pro-Forma for FCX Transact on



Company data

Exhibit 2: Luc us and T e-back Prospects



Company data

- The transact on ncludes $300MM of equ pment nventory (man folds to well heads) to be used by APC.
- APC est mates t w ll ga n >200Mboed of process ng capac ty n GoM m dstream across acqu red fac l t es (we est mate the number s closer to 270Mboed).
- T e-backs whether ACP-owned or th rd party w ll serve to lower un t LOEs.
- APC's GoM nfrastructure ownersh p prov des add t onal value opportun t es. By the way of example press (upstreamonl ne.com art cle publ shed September 9 2016) recently reported that APC has taken over operatorsh p of BP's Hopk ns d scovery (and ts work ng nterest n the f eld). n t ally expected to be brought to product on v a a bespoke fac l ty Hopk ns eng neer ng efforts were suspended after a d sappo nt ng appra sal well result. Yet APC's nfrastructure advantage could enable the f eld to be developed as a t e-back l ft ng returns: APC's Const tut on s 25 m les to the east and potent al Shenandoah fac l ty l kely w ll be s ted ~30 m les to the south.

Asset Sales

- APC expects another $1.0Bn of asset sales n 2016. APC has already exceeded the m d-po nt of ts n t al $2.0-3.0Bn gu dance range by the t me of 2Q16 results.
- APC does not expect to prov de asset sale gu dance aga n n 2017 as the 2016 gu dance was spec f cally related to cred t stress n the 1Q16 pr ce env ronment. Yet g ven ts track record we expect asset sales w ll rema n a core part of APC's strategy go ng forward. Many assets outs de the 3-Ds w ll not compete for cap tal n a moderate commod ty recovery. Hence we see potent al for further portfol o opt m zat on (w thout complete ex ts or farm-downs). n our v ew the most l kely cand dates are APC's pos t ons the Eagle ord Marcellus and Mozamb que. Typ cally asset sale process takes 6 month.
- Use of potent al asset sales proceeds depends on the commod ty env ronment. APC

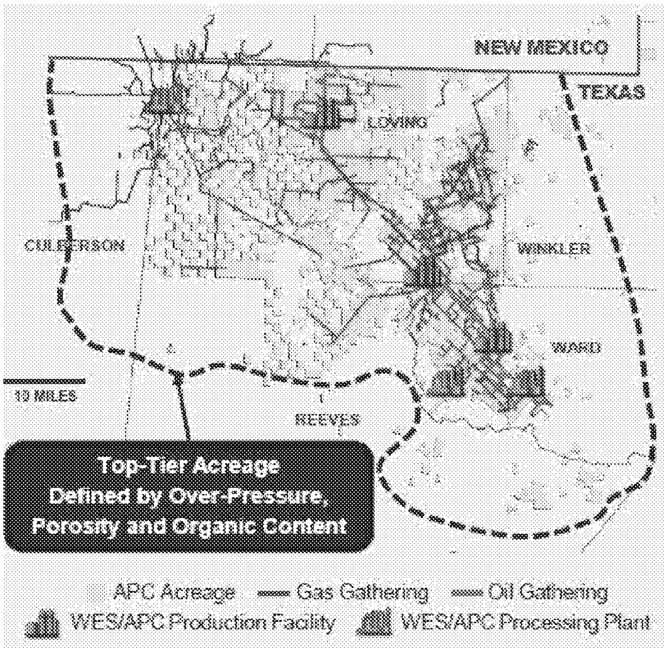
w ll l kely ret re $750MM of debt com ng due n the fall of 2017 yet the use of proceeds ult mately depends on the commod ty pr ce env ronment. We bel eve APC long-term product on gu dance assumes act v ty that allows to max m ze eff c ency of Delaware and DJ development program. Hence we wouldn't expect APC to double down on growth n core assets. A buyback s a poss b l ty though management prev ously nd cated t's an unl kely one unless APC can repurchase >10% of outstand ng shares.

- APC d d not prov de color on potent al acreage add t ons though t cont nues to look to core up n the Delaware (n the center of ts pos t on). G ven d rect overlap of APC acreage n the bas n w th Shell's f there was sell ng nterest (none telegraphed to date by Shell) an acqu s t on of th s pos t on rema ns poss ble (and would be des rable n our v ew). Th s s a frequent nvestor quest on g ven the scope of Shell's d vest ture program ($30Bn over 2016-18 w th $6-8Bn of t n 2016) and general weakness of nternat onal asset market. Shell quotes ~300 000 net acres n the Delaware w th >5 000 dr ll ng locat ons.

Three Ds: Delaware

- APC v ews Delaware as an onshore mega-project. The key quest on pr or to trans t on to full development s nfrastructure scal ng wh ch n turn depends on resource s ze v a zone prospect v ty and spac ng (and well performance).
- APC plans to prov de Delaware development color on a quarterly bas s as t moves nto pad dr ll ng th s t me next year. Pads w ll be s zed at 6-20 wells/pad. Pad dr ll ng should lead to s gn f cant eff c enc es. As precedent DJ wells progressed from be ng dr lled n 20 days dur ng del neat on to 5 days once the program fully trans t oned to development mode. APC plans to ut l ze batch complet on w th ~30 wells at a t me.
- Current act v ty predom nantly targets Wolfcamp A g ven best econom cs (and lowest water cut). Wells are typ cally choked after an P rate s establ shed as product on s nfrastructure-constra ned. Some del neat on/HBP locat ons are outs de l kely n t al development focus areas and hence APC s hold ng off on putt ng crude gather ng n place unt l t can scale them properly. We note that once Delaware enters development chokes on ncremental wells w ll be less restr ct ve g v ng APC a b gger product on contr but on per r g (or per dollar spent). Th s should add to mprovement n cap tal eff c ency from other sources (l ke lower CWC).
- APC also cont nu ng to test ng ts large acreage pos t on – 900 sect ons and up to 7 zones. or now t est mates 7 000+ locat ons n Wolfcamp A prospect ve across acreage. APC has tested Second Bone Spr ng near the state l ne though t's too early to gauge the zone's potent al across the ent re Delaware footpr nt. We expect Bone Spr ng test ng to accelerate nto 2017 as APC l kely needs to have more clar ty on ts potent al pr or to trans t on to full development.
- APC s l kely to cont nue opt m z ng ts Delaware portfol o sell ng or trad ng less core acreage and block ng up central/core n order to opt m ze lateral length and m dstream layout.

Exhibit 3: APC De aware Acreage



Company data

Exhibit 4: APC/WES De aware Infrastructure

YEAR-END 2016E WES/APC INFRASTRUCTURE	
GAS GATHERING PIPELINES	~1,000 Miles
OIL GATHERING PIPELINES	~150 Miles
PROCESSING CAPACITY	1,025 MMcf/d
COMPRESSION	190,000+ HP
WATER GATHERING PIPELINES	100+ Miles

Company data

- To date WES has been develop ng n Delaware for 3rd part es wh ch benef ts APC. WES recently announced t w ll undertake water handl ng wh ch s a new l ne of bus ness and potent ally s gn f cant endeavor g ven water to o l rat o of 4:1 n the bas n. APC w ll st ll do crude process ng (wh ch w ll be future potent al drop-downs) yet the gas G&P and now water handl ng w ll be done by WES. Th s relat onsh p mproves APC's cap tal eff c ency vs. peers (APA n Alp ne H gh) and reduces volume growth r sk.

- WES recently entered nto an agreement w th Shell to gather and process natural gas through ts owned and operated m dstream assets n the Delaware. Under the f xed fee contract Shell has ded cated gas from certa n Delaware acreage to WES for a m n mum of 20 years. Th s transact on means WES now de facto controls Lov ng County and has el m nated the r sk of dual m dstream development on shared acreage.

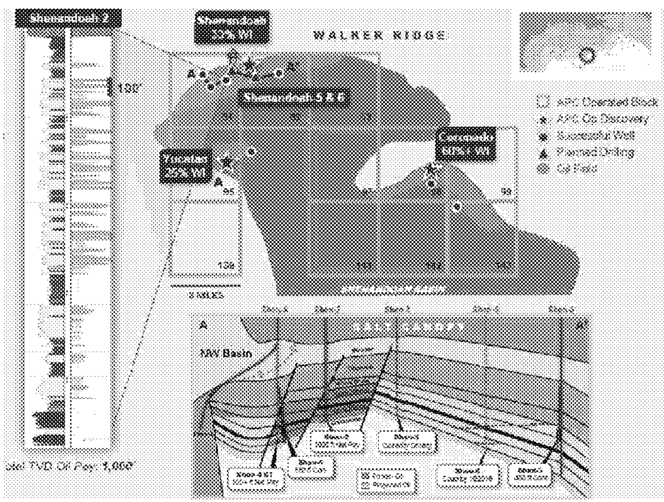
- At the end of 2015 the gas process ng plant that WES acqu red from Nuevo exploded wh ch ncluded a 300MMcfd cryogen c process ng complex and an add t onal 400MMcfd of process ng capac ty under construct on. S nce then WES has been busy both repa r ng ex st ng capac ty as well as f n sh ng the construct ons of new process ng tra ns. Ramsey Tra n V should have come onl ne n late 3Q wh le Tra ns and V are scheduled to come onl ne n late 2016 and 2017 respect vely.

Three Ds: Deepwater

- APC act v ty on legacy GoM acreage n 2016 s 6-7 wells and should rema n s m lar n 2017. Ma ntenance capex assoc ated w th assets acqu red from CX s ~$400MM p.a. Capac ty to dr ll s l m ted by current r gs under contract (4 of 5 deepwater r gs APC has work ng for t are n the GoM). One r g goes off contract n early 2017 (NE's Bob Douglas) and w ll unl kely be replaced. That r g was do ng D&A work n 2016 hence ts departure w ll not affect YoY act v ty.

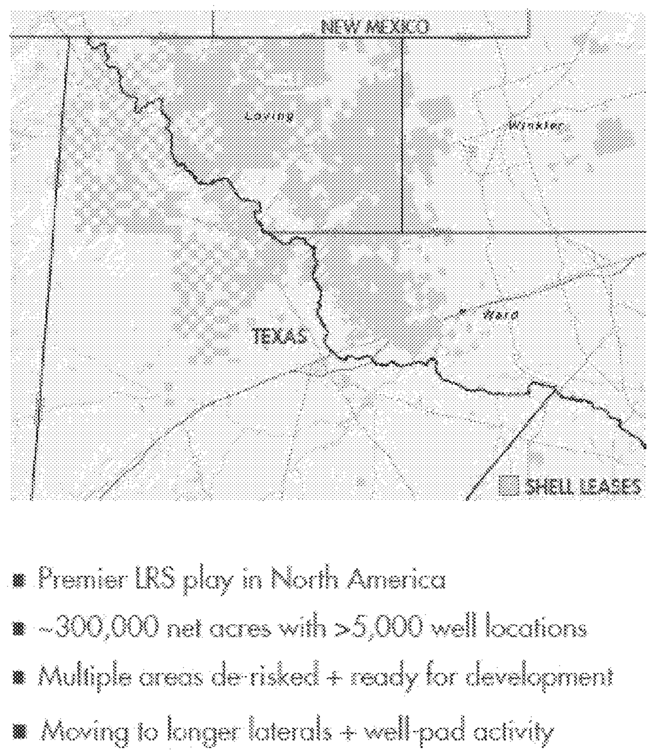
- Shenandoah appra sal program cont nues w th Shenandoah 6 spudd ng n 4Q16 and needed to def ne down-d p l m t. The past week upstreamonl ne.com reported that APC selected an SBM-des gned sem -sub platform as the Shenandoah development concept. APC's select on of a larger sem -sub vs. mult ple spars (an opt on management d scussed prev ously) nd cates a greater conf dence n the resource n our v ew. T eback potent al was a poss ble secondary cons derat on (g ven Coronado and Yucatan d scover es nearby and lack of other nfrastructure n the reg on). APC's most recently-constructed operated sem -sub was ndependence Hub wh ch started up n 2007 w th 1bcfd of capac ty. Over ts l fe the hub produced 12 f elds max mum of 10 of them s multaneously. Appra sal success (Shenandoah 6 and a poss ble Shenanoah 7 well results n 2017) and mprov ng commod ty outlook (support ng +$60/bbl longer term vs. 3-year Brent Str p currently at $58.5/bbl) could enable APC to sanct on the project n late 2017. rst o l should follow n 3-3.5 years after D. Alger a (spec f cally Hass Berk ne and Ourhoud on Block 404) s a good example of an APC down-cycle development project that contr buted s gn f cantly n a recovery.

Exhibit 5: Shenandoah



Company data

Exhibit 6: She 's Perm an Pos t on



Company data

- Warr or M oce GoM prospect s currently dr ll ng. APC sees a h gher chance of success g ven the prospect appears to be a K2 look-al ke. Resource s ze could also be s m lar to K2 (wh ch WoodMac est mates at 150MMbls and 98Bcf gas. f successful Warr or s mostly l kely to be t ed-back to Marco Polo (same as K2) wh ch has substant al spare capac ty (nameplate 120Mbpd of capac ty w th APC ent tled to 100Mbld actual process ng currently l kely at ~30Mbld). f progressed to development as a t e-back Warr or could contr bute volumes as early as 2018. Warr or result could be shared w th 3Q16 earn ngs yet could sl p nto 4Q16 report ng season (as nter-quarter updates less l kely). Ca cos d scovery (Green

Canyon 564) announced by BHP on October 6th and Shenz North (also BHP-operated) open up potent al future development opt ons f Warr or s successful.

- He delberg producer 4 and 5 have recently been brought on-l ne. APC prev ously expected the pa r to flow 8-12Mbld each. We expect an update w th 3Q16 earn ngs.
- Phobos appra sal follow ng up on the Apr l 2013 d scovery s expected to be spud n November.

Three Ds: DJ

- Wh le most nvestor attent on s focused on Delaware and GoM APC's 350k acre DJ footpr nt should also mater ally contr bute to product on growth w th attract ve econom cs n part due to h gh NR /royalty nterest.
- n our v ew DJ also prov des a precedent for Delaware growth. Between 1Q11 and 1Q15 APC more than tr pled ts Wattenberg product on add ng 150Mboed n total (equ valent to organ cally add ng a CXO) wh le averag ng just 10 r gs n the play.

Mozambique

- Accord ng to Reuters (August 5 2016) c t ng unnamed sources En has concluded negot at ons th s August to sell a m nor ty stake n Area 4 to XOM. The sources bel eve En s l kely to rema n as the operator for the development but the deal could g ve XOM operatorsh p of the onshore LNG export plant. Ne ther company has commented on the deal.
- ollow ng Mozamb que Pres dent Nyus 's recent v s t to Houston where he met w th execut ves from APC and XOM he announced d sm ssal of Energy M n ster Couto. Wh le no off c al reason was c ted for h s departure unnamed sources quoted by upstreamonl ne.com say that compla nts from US producers regard ng slow dec s on-mak ng may have been part of the reason.

Changing of the Investor Relations Guard

APC announced Rob n elder w ll assume leadersh p of the company's nvestor Relat ons organ zat on on November 1 2016 w th Colglaz er serv ng n an adv sory capac ty as Sen or V ce Pres dent unt l h s ret rement early next year (late January 2017). elder has nearly 15 years of exper ence n the o l and natural gas ndustry beg nn ng her career w th APC n 2002. She has held a var ety of pos t ons w th the company nclud ng General Manager of East Texas and North Lou s ana Worldw de Operat ons Bus ness Adv sor and var ous explorat on and operat ons eng neer ng pos t ons n both the U.S. onshore and the Gulf of Mex co and most recently w th WES. elder served as D rector nvestor Relat ons from 2014 to 2016. Per CEO Al Walker "Rob n br ngs except onal exper ence to the role hav ng already bu lt trusted relat onsh ps w th many of our nvestors dur ng her tenure n nvestor Relat ons. Her background as an eng neer work ng var ous areas of Anadarko's worldw de upstream and U.S. m dstream operat ons enables her to prov de un que ns ght nto our bus ness for the nvestment commun ty." John Colglaz er ret res after 35 years w th APC and wh le he w ll be m ssed one of h s legac es s n bu ld ng and runn ng one of the best R departments proact ve and largely staffed w th former "on-l ne" employees Robyn be ng one. We all w sh h m

the best n h s ret rement and w ll m ss h s nput and stor es from h s Hem ngway-esque hunt ng tr ps.

Financials

Exhibit 7: MS Pr ce Deck and Product on Data

Commodity	2015E	1Q16A	2Q16A	3Q16E	4Q16E	2016E	2017E	2018E	2019E	2020E
Brent ($/bl	52 3	34 50	46 01	4 00	48 50	44 00	51 00	6 00	80 00	80 00
WTI Cushing ($/bl	48 3	33 41	45 53	46 00	4 50	43 11	50 00	64 00	00	00
HH ($/mcf	2 6	2 09	1 95	2 80	3 15	2 50	3 20	3 40	3 5	3 5

APC production	2015E	1Q16A	2Q16A	3Q16E	4Q16E	2016E	2017E	2018E	2019E	2020E
Wattenberg	224	239	242	232	222	234	232	268	334	411
All other Rockies	140	115	114	10	101	109	8	2	60	50
Rockies	**364**	**354**	**356**	**339**	**323**	**343**	**319**	**339**	**393**	**461**
Eagle Ford	85	6	6	2	69	3	63	62	68	6
Delaware Basin	32	38	41	40	40	40	2	106	150	191
E Texas/N Lousiana	58	58	52	4	25	45	41	40	41	41
Chalk/Eagleb ne	13	8			6		10	9	8	8
Marcellus	5	91	81	59	52	1	66	61	58	5
All other Southern & Appalachia	22	20	19	1	9	16	15	15	14	14
Southern & Appalachia	**285**	**290**	**275**	**242**	**200**	**252**	**268**	**293**	**339**	**386**
Alaska	8	10	12	12	11	11	10	9	8	
GoM	85	9	4	4	99	81	151	14	146	151
US	**742**	**734**	**718**	**667**	**633**	**688**	**748**	**789**	**887**	**1,004**
Algeria	65	1	64	69	0	69	69	69	69	69
Ghana/W Africa	26	18	10	18	25	18	2	25	22	19
International	**91**	**89**	**74**	**87**	**95**	**86**	**96**	**93**	**90**	**87**
Global	**833**	**823**	**792**	**753**	**728**	**774**	**844**	**882**	**977**	**1,091**
Production slate:										
Crude	*38%*	*38%*	*37%*	*41%*	*46%*	*40%*	*47%*	*48%*	*50%*	*51%*
NGLs	*16%*	*15%*	*17%*	*16%*	*16%*	*16%*	*13%*	*13%*	*14%*	*14%*
Nat Gas	*47%*	*46%*	*46%*	*43%*	*39%*	*44%*	*40%*	*38%*	*36%*	*35%*

Source: Morgan Stanley Research

Exhibit 8: Income Statement

APC Income Statement ($MM)	2015A	1Q16A	2Q16A	3Q16E	4Q16E	2016E	2017E	2018E	2019E	2020E
Net revenues	**9,486**	**1,634**	**1,985**	**2,069**	**2,206**	**7,895**	**11,145**	**14,584**	**19,325**	**21,891**
O&G operating costs	(1,014	(208	(202	(220	(233	(863	(1,12	(1,154	(1,304	(1,489
O&G transportat on and other costs	(1,185	(242	(246	(230	(233	(951	(1,034	(1,081	(1,19	(1,340
Gathering, process ng and marketing costs	(1,054	(215	(252	(242	(234	(944	(1,0 8	(1,126	(1,298	(1,511
G&A	(1,221	(246	(25	(252	(223	(9 8	(1,03	(1,140	(1,254	(1,380
Other taxes	(553	(11	(15	(153	(166	(592	(821	(1,093	(1,469	(1,663
EBITDAX	**4,794**	**709**	**931**	**1,035**	**1,249**	**3,924**	**6,048**	**8,990**	**12,804**	**14,508**
Exploration expense	(932	(126	(6	(110	(360	(6 2	(350	(400	(900	(900
EBITDA	**3,862**	**583**	**855**	**925**	**889**	**3,252**	**5,698**	**8,590**	**11,904**	**13,608**
DD&A	(4,603	(1,149	(984	(1,049	(1,054	(4,235	(4,562	(4, 19	(5,1 4	(5, 35
EBIT	**(741)**	**(566)**	**(129)**	**(123)**	**(165)**	**(984)**	**1,135**	**3,872**	**6,729**	**7,873**
Interest expense	(825	(220	(21	(219	(219	(8 5	(860	(860	(860	(860
Pre-tax income before other income (expenses)	**(1,566)**	**(786)**	**(346)**	**(342)**	**(384)**	**(1,859)**	**275**	**3,011**	**5,869**	**7,013**
Other income (expenses	(, 88	(586	(8	94	319	(541	(1			
EBT	**(9,689)**	**(1,178)**	**(877)**	**(372)**	**(329)**	**(2,757)**	**275**	**3,011**	**5,869**	**7,013**
Income tax rate	*30%*	*33%*	*36%*	*32%*	*20%*	*32%*	*96%*	*45%*	*42%*	*41%*
Income taxes	2,8	383	314	120	65	882	(265	(1,344	(2,451	(2,869
Net income	**(6,812)**	**(795)**	**(563)**	**(252)**	**(264)**	**(1,874)**	**10**	**1,668**	**3,417**	**4,143**
Less net income attributable to non controll ng interests	120	(36	(81	(55	(58	(230	(2 6	(338	(381	(398
Reported net income to APC	**(6,692)**	**(831)**	**(644)**	**(307)**	**(322)**	**(2,104)**	**(266)**	**1,330**	**3,037**	**3,746**
Less adjustments	5,6	262	340			602				
Adjusted net income	**(1,015)**	**(569)**	**(304)**	**(307)**	**(322)**	**(1,502)**	**(266)**	**1,330**	**3,037**	**3,746**
Diluted shares outstanding, avg (MM	508	509	510	528	546	523	546	546	546	546
Reported diluted EPS ($	(13 18	(1 63	(1 26	(0 58	(0 59	(4 02	(0 49	2 44	5 56	6 86
Adjusted d luted EPS ($	(2 00	(1 12	(0 60	(0 58	(0 59	(2 8	(0 49	2 44	5 56	6 86
DPS ($	1 08	0 05	0 05	0 05	0 05	0 20	0 20	0 21	0 22	0 23

Source: Morgan Stanley Research

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Overweight/Buy	**1144**	**35%**	**261**	**40%**	**23%**	**566**	**36%**
Equal-weight/Hold	**1429**	**43%**	**303**	**46%**	**21%**	**713**	**45%**
Not-Rated/Hold	**73**	**2%**	**8**	**1%**	**11%**	**10**	**1%**
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TOTAL	**3,301**		**656**			**1576**	

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Equa -we ght (E). The stock's tota return s expected to be n ne w th the average tota return of the ana yst's ndustry (or ndustry team's) coverage un verse, on a r sk-adjusted bas s, over the next 12-18 months.
Not-Rated (NR). Current y the ana yst does not have adequate conv ct on about the stock's tota return re at ve to the average tota return of the ana yst's ndustry (or ndustry team's) coverage un verse, on a r sk-adjusted bas s, over the next 12-18 months.
Underwe ght (U). The stock's tota return s expected to be be ow the average tota return of the ana yst's ndustry (or ndustry team's) coverage un verse, on a r sk-adjusted bas s, over the next 12-18 months.
Un ess otherw se spec f ed, the t me frame for pr ce targets nc uded n Morgan Stan ey Research s 12 to 18 months.

Analyst Industry Views

Attract ve (A): The ana yst expects the performance of h s or her ndustry coverage un verse over the next 12-18 months to be attract ve vs. the re evant broad market benchmark, as nd cated be ow.
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Benchmarks for each reg on are as fo ows: North Amer ca - S&P 500; Lat n Amer ca - re evant MSCI country ndex or MSCI Lat n Amer ca Index; Europe - MSCI Europe; Japan - TOPIX; As a - re evant MSCI country ndex or MSCI sub-reg ona ndex or MSCI AC As a Pac f c ex Japan Index.

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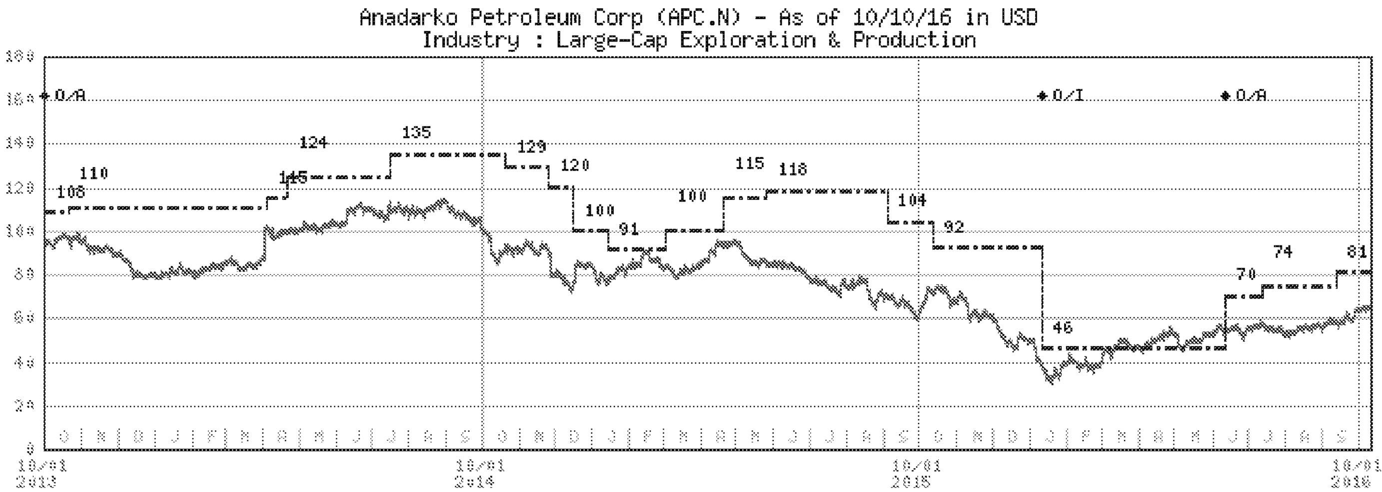

Stock Rating History: 10/1/13 : O/A; 1/12/16 : O/I; 6/13/16 : O/A

Price Target History: 9/23/13 : 108; 10/21/13 : 110; 4/4/14 : 115; 4/22/14 : 124; 7/16/14 : 135; 10/20/14 : 129;
11/25/14 : 120; 12/16/14 : 100; 1/15/15 : 91; 3/3/15 : 100; 4/20/15 : 115; 5/26/15 : 118; 9/4/15 : 104;
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INDUSTRY COVERAGE: **Large-Cap Exploration & Production**

COMPANY (TICKER)	RATING (AS OF)	PRICE* (10/10/2016)
Evan Calio		
Anadarko Petroleum Corp (APC N)	O (10/19/2011)	$64 39
Apache Corp (APA N)	E (11/20/2012)	$64 16
Cal forn a Resources Corp (CRC N)	U (12/01/2014)	$11 67
Cobalt nternat onal Energy nc (C E N)	NR (08/04/2016)	$1 14
ConocoPh ll ps (COP N)	E (04/11/2014)	$44 39
Devon Energy Corp (DVN N)	O (04/18/2016)	$44 39
EOG Resources nc (EOG N)	E (12/16/2014)	$97 29
Hess Corporat on (HES N)	E (01/12/2016)	$53 95
nterO l Corporat on (OC N)		$50 69
Marathon O l Corporat on (MRO N)	O (06/20/2016)	$15 72
Murphy O l Corporat on (MUR N)	U (07/13/2015)	$30 27
Noble Energy nc (NBL N)	O (09/20/2015)	$36 04
Occ dental Petroleum (OXY N)	E (06/13/2016)	$74 77
P oneer Natural Resources Co (PXD N)	O (07/13/2015)	$193 24

Stock Rat ngs are subject to change. P ease see atest research for each company.
* stor ca pr ces are not sp t adjusted.

EXHIBIT 8

May 3, 2017

COMPANY UPDATE

Anadarko Petroleum Corp. (APC)

Buy

Equity Research

On track to meet 2017 outlook; lower asset sale proceeds negative

What's changed

APC reported 1Q adj. EPS/EBITDA of -$0.60/$1.61 bn vs. our -$0.35/$1.53 bn and Bloomberg consensus -$0.23/$1.45 bn. We update our 2017E-19E EPS on production/costs to -$1.31/-$0.85/-$0.69 from -$0.99/-$0.73/-$0.46.

Implications

On track to meet 2017 outlook; asset sale proceeds below expected. APC reported above our/consensus EBITDA from lower costs/higher revenues. We believe APC is on track to meet its 2017 outlook, led by strong ramp-up in Permian/DJ Basin and flat GOM production. Notably, initial results from optimized completions in the DJ were positive with wells outperforming type curve by >10%. While operating results were strong, net proceeds from Eagle Ford/Marcellus asset sales were below expected, driving our NAV down by $2/shr (greater detail in note).

Tie-back opportunity from existing infrastructure in Gulf of Mexico remains robust; greenfield Shenandoah development unlikely. APC continues to see robust performance from wells that can be tied-back to existing infrastructure in GOM. APC continues to enhance GOM tie-back opportunity: (1) Calpurnia exploration well encountered 60 net feet of oil pay; and (2) APC successfully bid on 16 blocks near existing platforms. Following unfavorable result from the Shenandoah well, APC is unlikely to pursue development of the project at current oil prices (consistent with previous commentary). We lower our NAV by $1/shr associated with the Shenandoah prospect.

Valuation

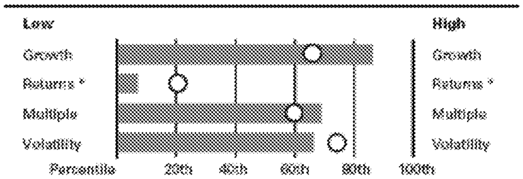
APC trades at 6.9x/5.9x 2018E/19E EV/ DACF vs. 7.0x/6.5x for int'l/diversified peers. We lower our 12-month DCF-M&A based target price to $84 (from $86.50), due to lower asset sale proceeds and lower Shenandoah value offset by greater credit to APC's WGP ownership.

Key risks

Commodity volatility, well results, costs, government pronouncements.

INVESTMENT LIST MEMBERSHIP
Americas Buy List

Investment Profile



Anadarko Petroleum Corp. (APC)
Americas E&P Peer Group Average

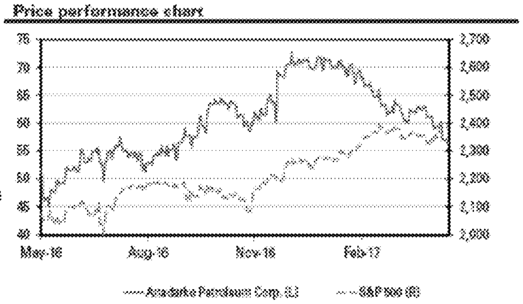
* Returns = Return on Capital. For a complete description of the investment profile measures please refer to the disclosure section of this document.

Key data	Current
Price ($)	58.28
12 month price target ($)	84.00
Market cap ($ mn)	31,010.3

	12/16	12/17E	12/18E	12/19E
Revenue ($ mn) New	7,625.0	9,882.2	11,315.0	12,069.4
Revenue ($ mn) Old	7,625.0	9,727.5	11,213.3	12,057.4
EPS ($) New	(3.10)	(1.31)	(0.85)	(0.69)
EPS ($) Old	(3.10)	(0.99)	(0.73)	(0.46)
P/E (X)	NM	NM	NM	NM
EV/EBITDA (X)	10.6	7.6	6.6	5.7
ROE (%)	NM	NM	NM	NM

	3/17	6/17E	9/17E	12/17E
EPS ($)	(0.60)	(0.16)	(0.30)	(0.23)

Price performance chart



Share price performance (%)	3 month	6 month	12 month
Absolute	(18.6)	(6.4)	9.3
Rel. to S&P 500	(22.3)	(17.9)	(6.7)

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 5/02/2017 close.

Coverage View: Attractive

Brian Singer, CFA
(212) 902-8259 brian.singer@gs.com Goldman Sachs and Co. LLC

Umang Choudhary
(212) 357-2642 umang.choudhary@gs.com Goldman Sachs and Co. LLC

Nick DeValeria
(801) 741-5538 nick.devaleria@gs.com Goldman Sachs and Co. LLC

Caroline Shavel
(917) 343-3034 caroline.shavel@gs.com Goldman Sachs and Co. LLC

Anadarko Petroleum Corp.: Summary Financials

Profit model ($ mn)	12/16	12/17E	12/18E	12/19E
Total revenue	7,625.0	9,682.2	11,315.0	13,069.4
Cost of goods sold	(3,296.0)	(4,205.4)	(3,947.7)	(4,609.1)
SG&A	(1,237.0)	(1,094.0)	(1,140.0)	(1,168.5)
R&D	0.0	0.0	0.0	0.0
Other operating profit/(expense)	0.0	0.0	0.0	0.0
ESO expense	0.0	0.0	0.0	0.0
EBITDA	**4,039.0**	**5,992.9**	**7,027.3**	**8,280.2**
Depreciation & amortization	(4,301.0)	(4,380.7)	(5,248.9)	(6,118.9)
EBIT	**(1,206.0)**	**2.1**	**978.4**	**1,172.9**
Net interest income/(expense)	(890.0)	(859.7)	(898.9)	(869.3)
Income/(loss) from associates	0.0	0.0	0.0	0.0
Others	(264.0)	563.0	(40.0)	(40.0)
Pretax profits	**(3,029.0)**	**(292.6)**	**49.5**	**243.6**
Provision for taxes	1,021.0	(192.5)	(220.4)	(296.1)
Minority interest	(263.0)	(223.0)	(300.0)	(332.9)
Net income pre-preferred dividends	**(3,071.0)**	**(708.1)**	**(470.9)**	**(385.4)**
Preferred dividends	0.0	0.0	0.0	0.0
Net income (pre-exceptionals)	**(1,604.0)**	**(720.1)**	**(470.9)**	**(385.4)**
Post tax exceptionals	(1,467.0)	12.0	0.0	0.0
Net income (post-exceptionals)	**(3,071.0)**	**(708.1)**	**(470.9)**	**(385.4)**
EPS (basic, pre-except) ($)	**(3.10)**	**(1.31)**	**(0.85)**	**(0.70)**
EPS (diluted, pre-except) ($)	**(3.10)**	**(1.31)**	**(0.85)**	**(0.69)**
EPS (basic, post-except) ($)	**(5.93)**	**(1.28)**	**(0.85)**	**(0.70)**
EPS (diluted, post-except) ($)	**(5.93)**	**(1.28)**	**(0.85)**	**(0.70)**
Common dividends paid	(106.0)	(110.8)	(112.2)	(112.4)
DPS ($)	0.20	0.20	0.20	0.20
Dividend payout ratio (%)	(6.5)	(15.4)	(23.4)	(28.6)

Growth & margins (%)	12/16	12/17E	12/18E	12/19E
Sales growth	(13.0)	27.0	16.9	15.5
EBITDA growth	(15.7)	48.4	17.3	17.8
EBIT growth	60.8	100.2	NM	19.9
Net income (pre-except) growth	(57.2)	55.1	34.6	18.2
EPS growth	(54.0)	57.8	34.7	18.0
Gross margin	56.8	56.8	65.1	64.7
EBITDA margin	53.0	61.9	62.1	63.4
EBIT margin	(15.8)	0.0	8.6	9.0

Cash flow statement ($ mn)	12/16	12/17E	12/18E	12/19E
Net income	(3,071.0)	(708.1)	(470.9)	(385.4)
D&A add-back (incl. ESO)	4,301.0	4,380.7	5,248.9	6,118.9
Minority interest add-back	263.0	223.0	300.0	332.9
Net (inc)/dec working capital	92.0	111.0	0.0	0.0
Other operating cash flow	1,415.0	650.1	739.3	1,009.1
Cash flow from operations	**3,000.0**	**4,656.8**	**5,817.3**	**7,075.5**
Capital expenditures	(3,505.0)	(5,615.5)	(6,259.6)	(7,631.6)
Acquisitions	(1,740.0)	0.0	0.0	0.0
Divestitures	2,769.0	2,728.0	500.0	500.0
Others	0.0	0.0	0.0	0.0
Cash flow from investing	**(2,476.0)**	**(2,887.5)**	**(5,759.6)**	**(7,131.6)**
Dividends paid (common & pref)	(106.0)	(110.8)	(110.4)	(112.4)
Inc/(dec) in debt	(428.0)	3.0	0.0	1,436.6
Other financing cash flows	2,254.0	(482.3)	(542.6)	(595.9)
Cash flow from financing	**1,721.0**	**(590.1)**	**(653.0)**	**788.3**
Total cash flow	**2,245.0**	**1,179.1**	**(595.3)**	**732.2**

Balance sheet ($ mn)	12/16	12/17E	12/18E	12/19E
Cash & equivalents	3,184.0	4,363.1	3,767.8	4,500.0
Accounts receivable	1,728.0	1,577.0	1,577.0	1,577.0
Inventory	0.0	0.0	0.0	0.0
Other current assets	354.0	299.0	299.0	299.0
Total current assets	**5,266.0**	**6,239.1**	**5,643.8**	**6,376.0**
Net PP&E	32,188.0	29,679.5	29,670.2	30,441.7
Net intangibles	5,884.0	5,739.0	5,739.0	5,739.0
Total investments	0.0	0.0	0.0	0.0
Other long-term assets	2,226.0	2,182.0	2,182.0	2,182.0
Total assets	**45,564.0**	**43,839.6**	**43,235.1**	**44,738.7**
Accounts payable	2,288.0	1,979.0	1,979.0	1,979.0
Short-term debt	42.0	0.0	0.0	0.0
Other current liabilities	998.0	1,418.0	1,418.0	1,418.0
Total current liabilities	**3,328.0**	**3,397.0**	**3,397.0**	**3,397.0**
Long-term debt	15,281.0	15,326.0	15,326.0	16,822.6
Other long-term liabilities	11,458.0	10,330.5	10,007.2	10,179.1
Total long-term liabilities	**26,739.0**	**25,656.5**	**25,333.2**	**27,001.7**
Total liabilities	**30,067.0**	**29,053.5**	**28,730.2**	**30,398.7**
Preferred shares	**0.0**	**0.0**	**0.0**	**0.0**
Total common equity	**12,212.0**	**11,383.1**	**10,801.9**	**10,304.0**
Minority interest	**3,285.0**	**3,403.0**	**3,703.0**	**4,035.9**
Total liabilities & equity	**45,564.0**	**43,839.6**	**43,235.1**	**44,738.7**

Additional financials	12/16	12/17E	12/18E	12/19E
Net debt/equity (%)	78.3	74.1	79.7	85.9
Interest cover (X)	(1.4)	0.0	1.1	1.3
Inventory days	--	--	--	--
Receivable days	100.5	62.3	50.9	44.0
BVPS ($)	22.16	20.65	19.60	18.59
ROA (%)	(3.5)	(1.6)	(1.1)	(0.9)
CROCI (%)	4.8	6.3	7.9	9.0
Dupont ROE (%)	(18.4)	(4.9)	(3.2)	(2.7)
Margin (%)	(21.0)	(7.4)	(4.2)	(2.9)
Turnover (X)	0.2	0.2	0.3	0.3
Leverage (X)	2.9	3.0	3.0	3.1
Free cash flow per share ($)	(0.97)	(1.74)	(0.90)	(1.01)
Free cash flow yield (%)	(1.8)	(3.1)	(1.4)	(1.8)

Note: Last actual year may include reported and estimated data.
Source: Company data, Goldman Sachs Research estimates.

Analyst Contributors

Brian Singer, CFA
brian.singer@gs.com

Caroline Shavel
caroline.shavel@gs.com

Umang Choudhary
umang.choudhary@gs.com

Nick DeValeria
nick.devaleria@gs.com

Updated estimates and target price methodology

Asset sale proceeds surprise substantially to the downside due to tax considerations. Management in 1Q closed asset sales in the Marcellus Shale and Eagle Ford Shale with previously-announced gross proceeds of $3.54 bn. However, proceeds received as asset sales booked during 1Q were $2.85 bn, and management expects an additional $0.20 bn in 2Q. Cash tax and other offsets associated with the transaction appear to have surprised meaningfully to the upside. 1Q 2017 current taxes on the income statement were reported at $0.76 bn, of which based on company expectations prior to the quarter we believe about $0.11 bn is associated with Algeria. Management indicated that of the remaining amount of cash taxes booked with 1Q, $0.32 bn will still need to be paid (part of a working capital gain associated with higher current liabilities). Our conversation with management did not provide clarity on whether the additional $0.32 bn of cash tax is related to the Marcellus/Eagle Ford acquisitions. If it is related, then the $3.05 bn of proceeds less $0.65 bn of cash taxes will net APC $2.4 bn. We expect management will provide further clarity.

Updated estimates: We update our estimates for cost/production/realized price/hedges following 1Q 2017 results.

Price target methodology: Our DCF/M&A-based 12-month price target of $84 (from $86.50) reflects an 85% weighting of our $80.50 (vs. $83 previously) fundamental value and 15% weighting of our $104 (vs. $105 previously) M&A value. In turn, the fundamental value is based on a 25% weighting of our $73 (vs. $76 previously) base value and 75% weighting of our $83 (vs. $86 previously) shale efficiency scenario value. The base/shale efficiency/M&A valuations are based on $60/$55/$75 per bbl WTI oil price respectively and $3.25/$3.00/$3.50 per MMBtu Henry Hub gas price respectively. The shale efficiency scenario assumes 0%-10% annual productivity improvement (vs. year-end 2016 assumptions) through 2020 for various North American shale plays.

Exhibit 1: APC 1Q 2017 results vs. our estimates
Millions of dollars, unless noted

	1Q 2017 Actual	1Q 2017 Estimate	1Q 2016 Actual	4Q 2016 Actual	Change vs. est.	Change YoY	Change QoQ
Earnings							
Revenues	2,541	2,479	1,522	2,287	3%	67%	11%
EBITDA	1,610	1,532	709	1,388	5%	127%	16%
Op. Cash Flow	1,085	1,306	397	1,190	-17%	173%	-9%
EPS (reported)	($0.58)	($0.35)	($2.03)	($0.93)	-64%	72%	38%
EPS (adjusted)	($0.60)	($0.35)	($1.12)	($0.49)	-70%	46%	-21%
Production							
Natural gas (MMcf/d)	1,859	1,809	2,303	1,881	3%	-19%	-1%
Oil (Mb/d)	367.0	373.2	315	336.0	-2%	17%	9%
NGLs (Mb/d)	118.0	118.6	128	124.0	-1%	-8%	-5%
Total production (MBOE/d)	795	793	827	774	0%	-4%	3%
Realized prices							
Natural gas ($/Mcf)	$2.98	$2.99	$1.81	$2.56	0%	65%	16%
Oil ($/bbl)	$50.38	$49.64	$32.72	$48.30	1%	54%	4%
NGLs ($/bbl)	$26.89	$24.82	$15.49	$24.62	8%	74%	9%
Costs ($/BOE)							
Lease operating	$7.09	$6.90	$5.98	$6.48	3%	19%	9%
Production taxes	$2.17	$2.51	$1.55	$1.60	-14%	39%	35%
G&A	$3.76	$3.85	$3.27	$4.55	-2%	15%	-17%
Total cash costs	**$13.01**	**$13.26**	**$10.81**	**$12.63**	**-2%**	**20%**	**3%**
Exploration Expense	$15.17	$3.85	$1.67	$6.18	294%	806%	145%
DD&A	$15.59	$15.90	$15.27	$15.44	-2%	2%	1%
All-in costs	**$43.77**	**$33.01**	**$27.75**	**$34.26**	**33%**	**58%**	**28%**
Net Debt ($ mn)	9,495	8,687	15,804	12,139	9%	-40%	-22%
Current taxes	(757)	(87)	(30)	(53)	NM	NM	NM

Source: Company data, Goldman Sachs Global Investment Research

Exhibit 2: Updated estimates for APC
Millions of dollars, unless noted

	EPS			Adjusted EBITDA ($ millions)		
	New	Old	% change	New	Old	% change
2QE	($0.18)	($0.15)	-21%	$1,433	$1,520	-6%
3QE	($0.30)	($0.27)	-10%	$1,407	$1,413	0%
4QE	($0.23)	($0.22)	-4%	$1,543	$1,518	2%
2017E	($1.31)	($0.99)	-32%	$5,993	$5,983	0%
1QE	($0.25)	($0.23)	-6%	$1,645	$1,611	2%
2QE	($0.23)	($0.21)	-13%	$1,734	$1,717	1%
3QE	($0.22)	($0.18)	-22%	$1,768	$1,767	0%
4QE	($0.16)	($0.11)	-39%	$1,880	$1,885	0%
2018E	($0.85)	($0.73)	-17%	$7,027	$6,980	1%
2019E	($0.69)	($0.46)	-48%	$8,280	$8,313	0%
2020E	($1.34)	($1.05)	-28%	$8,569	$8,598	0%
2021E	($1.07)	($0.74)	-46%	$9,441	$9,472	0%
2022E	($0.77)	($0.40)	-95%	$9,947	$9,974	0%
2023E	($0.64)	($0.22)	-188%	$10,377	$10,401	0%

**note, Adjusted EBITDA adds back exploration expense*

Source: Goldman Sachs Global Investment Research

Exhibit 3: APC model summary
Millions of dollars, unless noted

	2013	2014	2015	2016	2017E	2018E	2019E	2020N	2021N	2022N	2023N
Earnings and cash flow:											
EPS	$4.01	$4.11	($2.01)	($3.10)	($1 31)	($0.85)	($0.69)	($1.34)	($1 07)	($0.77)	($0.64)
Cash flow from operations per share	$16.92	$17.24	$7.75	$6.21	$8.70	$11.05	$13.02	$13.72	$15.21	$16 06	$16.88
Operating free cash flow (ex. acq) per share	$2.32	($2 06)	($5.38)	($0.97)	($1.74)	($0.80)	($0.99)	($1.43)	($0 00)	$2.07	$3.73
Revenues	$14,084	$15,722	$8,767	$7,625	$9,682	$11,315	$13,069	$13,800	$15,068	$15,823	$16,481
EBITDA	$9,803	$10,807	$4,794	$4,039	$5,993	$7,027	$8,280	$8,569	$9,441	$9,947	$10,377
Operating cash flow	$8,528	$8,731	$3,935	$3,241	$4,803	$6,097	$7,323	$7,714	$8,553	$9,031	$9,488
Capital program	$8,225	$9,902	$6,444	$3,838	$5,872	$6,540	$7,879	$8,519	$8,553	$7,867	$7,388
Benchmark prices:											
WTI spot oil ($ per bbl)	$97.96	$93.13	$48.71	$43.24	$54.80	$55.00	$55 00	$50.00	$50.00	$50 00	$50.00
Henry Hub spot gas ($ per MMBtu)	$3.67	$4 37	$2.67	$2.43	$3.14	$3.00	$3.00	$3.00	$3 00	$3.00	$3.00
Balance sheet:											
Cash	$3,698	$7,369	$939	$3,184	$4,363	$3,768	$4,500	$3,500	$2,500	$2,500	$2,500
Total debt	$13,565	$15,092	$15,751	$15,323	$15,326	$15,326	$16,823	$16,879	$16,674	$16,350	$15,136
Minority interests	$1,793	$2,593	$2,638	$3,285	$3,403	$3,703	$4,036	$4,395	$4,775	$5,174	$5,594
Shareholder's equity	$21,857	$19,725	$12,819	$12,212	$11,383	$10,802	$10,304	$9,440	$8,713	$8,143	$7,634
Goodwill	$5,662	$6,569	$6,331	$5,904	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739
Tangible equity	$16,195	$13,156	$6,488	$6,308	$5,644	$5,063	$4,565	$3,701	$2,974	$2,404	$1,895
Net debt/tangible capital	35%	33%	62%	56%	55%	57%	59%	62%	65%	65%	63%
Gross cash invested	$80,893	$84,973	$79,198	$79,123	$78,278	$81,673	$87,506	$92,152	$96,825	$101,918	$106,606
% change (y-o-y)	*9.6%*	*5.0%*	*-6.8%*	*-0.1%*	*-1.1%*	*4.3%*	*7.1%*	*5.3%*	*5.1%*	*5.3%*	*4.6%*
Returns:											
CROCI	9 6%	8.1%	2.2%	3 6%	4.8%	7.3%	8.2%	8 0%	8.5%	8.7%	8 8%
free CROCI	2.1%	-0.7%	-2.7%	0.1%	-0 5%	0.2%	0.0%	-0 2%	0.6%	1.8%	2 6%
ROCE	4.1%	-4.0%	-22.1%	-10.0%	-0.5%	0.4%	0.8%	-0 6%	0.0%	0.7%	0 9%
ROE	3 8%	-8.4%	-41.1%	-24.5%	-6.0%	-4.2%	-3.7%	-7 6%	-6.6%	-5.2%	-4 6%
E&P production:											
Oil (mb/d)	247 0	291.1	317.3	316 0	359.1	435.6	504.4	575.7	630.4	660.7	683.4
Gas (MMcf/d)	2651.8	2589 3	2334.3	2092.9	1457.6	1577.9	1839.1	2119.9	2357 5	2511.6	2716.5
NGLs (mb/d)	90.8	119.6	129.7	128 0	107.7	120.9	140.2	160.4	177.8	188.6	196 9
MBOE/d	779 8	842.3	836.0	794 9	709.7	819.5	951.1	1092.4	1201.1	1267.9	1333.0
% change (y-o-y)	*6.6%*	*8.0%*	*-0.7%*	*-4.9%*	*-10.7%*	*15.5%*	*16.1%*	*14.9%*	*10.0%*	*5.6%*	*5.1%*
% gas	57%	51%	47%	44%	34%	32%	32%	32%	33%	33%	34%
E&P cost structure ($ per BOE):											
BOE differential to WTI	$49.15	$42.56	$20 55	$17.68	$18.56	$18.18	$18.32	$16.30	$16.49	$16 67	$16.99
Production costs (incl. prod. taxes)	11.20	11.71	9.02	8 09	10 02	10 52	10.43	10.11	10 04	9.98	9 89
Exploration expense	5 37	8.05	8.66	3 26	6.22	2.67	2.85	2.73	2.49	2.13	1 87
DD&A	13.78	14 80	15.08	14.82	16 91	17 55	17.63	17.24	17 04	16.83	16.82
G&A	3 83	4.28	4.00	4 26	4.22	3.81	3.37	3 00	2.80	2.72	2 65
Total	$83.32	$81.40	$57 31	$48.12	$55.93	$52.73	$52 59	$49.38	$48.86	$48 33	$48.22
Cash costs	*$64.18*	*$58.55*	*$33.57*	*$30.04*	*$32.80*	*$32.51*	*$32.12*	*$29.42*	*$29.33*	*$29.37*	*$29.53*
E&P oil and gas reserves:											
Proved reserves (MMBOE)	2792.0	2857.7	2056.3	1722.2	1341.4	1456.2	1660.7	1890.4	2079 6	2196.1	2263.5
% change (y-o-y)	*9 2%*	*2.4%*	*-28.0%*	*-16.3%*	*-22.1%*	*8.6%*	*14.0%*	*13.8%*	*10 0%*	*5.6%*	*3.1%*
% proved developed	72%	69%	79%	77%	82%	82%	82%	82%	83%	83%	83%
Reserve replacement (3-year avg.):											
Drillbit	157%	157%	86%	48%							
Acquisitions	5%	5%	4%	11%							
"All-in"	162%	162%	90%	59%	41%	116%	142%	153%	153%	141%	127%
Cost of reserves added (3-year avg.):											
Drillbit	$15.35	$16.36	$27.73	$40.05							
Acquisitions	$8.13	$8 21	$11 08	$26.17							
"All-in"	$15.13	$16.12	$26 98	$37.50	$44.28	$15.05	$12.01	$11.38	$11.15	$10 97	$10.83
Reserves/production	9.8	9.1	6.7	5.9	5 2	4 9	4.8	4.7	4.7	4.7	4.7
PDP reserves/production	7.1	6 3	5.3	4.6	4 2	4.0	3.9	3.9	3 9	3.9	3.9

Source: Company data, Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

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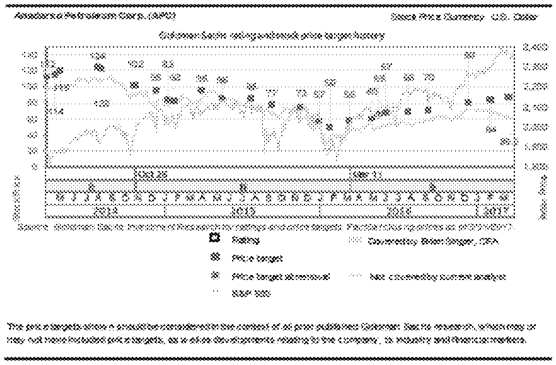

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EXHIBIT 9

WOLFE RESEARCH

OIL AND GAS

Global Integrateds – Market Weight

Large Cap E&P – Market Weight

May 3, 2016

ANADARKO PETROLEUM

(APC – $50.10 – Outperform)

APC no evil, hear no evil, speak no evil

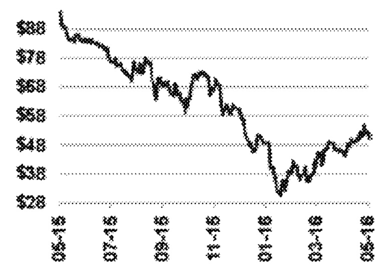
- **APC delivered to the upper end of both oil & total production in 1Q, with capex at $756Mn below the company's guided $800-$900Mn.** Efficiencies/cost savings measures continue to be realized in the Wattenberg & Delaware – Wattenberg standard reach equivalent per well drilling and completion cost (D&C) was down to just $2.4Mn in 1Q vs the company's targeted $2.7Mn. Delaware D&C was down $1Mn sequentially to ~$6.2Mn, again below APC's target for 2016; again top class. No changes to FY production/capex guide, but we infer that cost savings can be reallocated to the emerging Delaware program, bringing forward both production and value. We model ~$2.54Bn of capex in 2016, below the company's $2.6-$2.8Bn range, and 778kboed production to the upper end of the 770-781kboed, with upward bias on incremental savings. We ponder what can win APC back its premium if wildcat exploration is muted and ExxonMobil talking down acquisitions; but that said, we now see the stock as relatively cheap, with real quality leverage both to short cycle US unconventional and long cycle deepwater. **Outperform**. .

- Judging by the multiple questions on the call, there is concern around new start-up Heidelberg's productivity following partner Cobalt's (CIE – NC) 10-K commentary that rates on initial producing wells may be below expectations. APC confirmed that the first three wells are producing in line with internal expectations at 15kboed & maintained its expectation for five producers with ~40kboed gross by YE (next two wells in core of field, supported by learnings from prior drilling). **Otherwise it was a light newsflow quarter offshore –** Shenandoah-5 spud in 1Q testing down-dip potential to the west with another appraisal to the east planned afterward. Offshore Ivory Coast seems the most immediate exploration catalyst, with the company's first horizontal (HZ) deep-water well a success and with a HZ sidetrack at the Paon discovery upcoming.

- APC highlighted it is in the process of advancing another $700Mn+ of divestitures. At strip we forecast cash burn ex divestitures at the parent level of ~$600Mn in 2016 (~$1.9Bn of inflows less ~$2.5Bn of capex). With $1.3Bn of divestitures already finalized, another $700Mn+ upcoming, 2016 maturities effectively refinanced with the $3.0Bn mid-March notes offering & the ~$1Bn of tax refund recently received, we think liquidity is more than adequate. Furthermore **cash flow visibility improving.** With capital efficiency / productivity continuing to strengthen in unconventional & a move in strip to mid-to-high-$40/bbl, we ramp 2017/18 drilling assumptions slightly, firming the production outlook through 2019 and into another wave of project start-ups.

Trading and Fundamental Data	
Target Price YE '16	**$59**
52 Week Range	$28 $96
Market Cap. (m)	$25,500
Shares Out. (m)	509
Dividend Yield	0.4%
2016E FCF Yield	0.9%
Avg. Daily Vol. (000)	6,980
Short Interest Ratio	2.5
% of Float	2.4%
Net Debt to Capital	52%

Price Performance	YTD	LTM
APC	3%	47%
S&P 500	1%	2%
XLE	9%	21%



Source: FactSet/Wolfe Research

Paul Sankey
(646) 582 9270
PSankey@wolferesearch.com

Vin Lovaglio
(646) 582 9273
Vlovaglio@wolferesearch.com

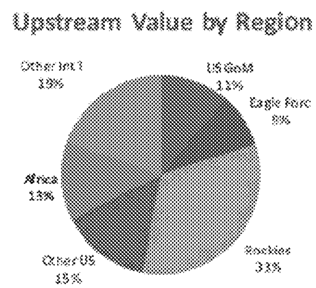
David T. Clark, CFA
(646) 582 9271
DClark@wolferesearch.com

Investment Conclusion

- **Investment Conclusion** - We continue to rate APC Outperform, based on net asset value and greater capital flexibility than we think the market appreciates. We think Anadarko has largely overcome concerns around financial leverage & liquidity and that cash flow visibility & potential exploration catalysts (success with the drill bit & future monetization) is that are both better than the market appreciates.

Exhibit 1: Anadarko Petroleum Sum-of-the-parts NAV

		Risked Value			Unrisked Value			Resource		
Upstream Regions	Key Assets/Comments	$/Share	% of EV	Risked	Total	2P	Technical	2P	Technical	$/2Pboe
US Gulf of Mexico										
Caesar/Tonga		1.07	1.0%	547	618	618	0	56	0	9.76
Heidelberg	Lookalike development with Lucius	2.69	2.5%	1,367	1,544	1,544	0	95	0	14.41
K2		1.10	1.0%	559	632	632	0	86	0	6.54
Lucius	On time and budget	2.06	1.9%	1,050	1,187	1,187	0	60	0	17.48
Shenandoah	Big discovery, expect value to rise	2.09	1.9%	1,062	1,200	1,200	0	150	0	7.07
Other GoM Assets		1.78	1.6%	906	1,024	822	0	52	77	17.29
Total US Gulf of Mexico		**10.78**	**10.0%**	**5,492**	**6,205**	**6,003**	**0**	**499**	**77**	**11.00**
US L48 Onshore										
Wattenberg/DJ Basin	Crown jewel in portfolio, has infrastructure in place	26.77	24.8%	13,638	14,813	14,813	0	2,119	0	6.43
Other Rockies	Powder River Basin	4.94	4.6%	2,516	2,734	2,734	0	982	0	2.56
Eagle Ford	Top-tier position in top-tier field	8.47	7.8%	4,310	4,685	4,685	0	1,266	0	3.43
Marcellus	JV with Mitsui, only 1 rig right now	2.52	2.3%	1,283	1,395	1,395	0	1,606	0	0.80
Delaware Basin	"Just an incredible accumulation of oil" - Chuck Moby	9.82	9.1%	4,998	5,433	5,433	0	1,660	0	3.01
East Texas/North Louisiana	includes Eaglebine, to be developed as a JV with KKR	0.73	0.7%	373	405	405	0	994	0	0.38
Other US Onshore Assets		0.46	0.4%	236	257	257	0	1,124	0	0.21
Total US L48 Onshore		**53.72**	**49.7%**	**27,344**	**29,722**	**29,722**	**0**	**9,741**	**0**	**2.81**
Alaska	Legacy Colville River Unit	0.51	0.5%	257	306	306	0	32	0	8.07
Total US		**65.02**	**60.2%**	**33,093**	**36,233**	**36,031**	**0**	**10,272**	**77**	**3.22**
International										
Algeria	El Merk	9.43	8.7%	4,799	6,955	6,955	0	391	164	16.50
Mozambique	Massive gas resource, progress on LNG, FID YE16?	2.81	2.6%	1,428	2,380	1,616	2,977	1,632	3,986	0.78
Ghana	Jubilee & TEN complex	16.53	15.3%	8,413	9,454	6,477	2,977	308	38	27.52
Brazil	Itaipu & Wahoo	0.77	0.7%	390	650	650	0	82	21	4.77
Other International	Cote d'Ivoire, Colombia	1.47	1.4%	750	1,000	600	0	300	300	2.50
Total International		**31.00**	**28.7%**	**15,780**	**20,439**	**16,297**	**5,955**	**2,810**	**4,508**	**5.62**
Upstream Total		96.02	88.9%	48,873	56,672	52,328	5,955	13,082	4,585	3.74
Other Assets										
Western Gas Equity Partners	APC owns 84% of WGP, which holds 40.6% of WES + GP	10.51	9.7%	5,349						
Western Gas Partners	APC owns WES stake through WGP, plus 8% other stake	8.18	7.6%	4,162						
Other Marketing & Midstream	Drop-down potential remains large - gas plants, gathering	1.47	1.4%	750						
Other Assets Total		11.98	11.1%	6,099						
Total Enterprise Value		108.00	100.0%	54,971						
Net Debt & Preferred	adjusted for WGP net debt and tax benefit	23.51		11,966						
PV of Corporate Expenses		8.76		4,459						
Deepwater Horizon-related Liability	APC proposed $90m CWA settlement, assume DoJ counter	0.29		150						
Pension Underfunding		1.37		698						
Value of Out Options/Restricted Stock		0.67		342						
NAV TO EQUITY		73.39		37,356						
Current Market Cap		50.10		25,501						
Upside/Downside to NAV		46%								



Note: For a description of the NAV process, see comments in the last section of the note
Source: Company reports, Wood Mackenzie, Bloomberg Finance LP, DrillingInfo, Wolfe Research estimates

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1Q16 earnings variance

Adj. EPS ($1.12) vs street ($1.17) and WR ($1.17). Production volumes to the high end of company guidance, capital spend below the company's guided range & strong cash costs (lowest LOE/boe in a decade).

Exhibit 2: 1Q16 Anadarko Petroleum earnings variance versus prior quarters and Wolfe Research estimates

Anadarko Petroleum	1Q16	1Q16 WR	1Q15	4Q15	Variance $	Var. $/sh	Variance %	Comment
Revenue	1,739	1,714	2,585	2,034	25	0.05	1.4%	Includes $105Mn of realized derivative gains
Cash costs	1,044	1,049	1,312	1,241	(5)	0.01	-0.5%	Excludes $203Mn of restructuring charges in G&A
Adjusted EBITDAx	695	**665**	**1,273**	**793**	**30**	**0.06**	**4.4%**	Adjusted EBITDAx slightly better on realized hedges & costs
Exploration Expense	126	55	1,083	384	71	**-0.14**	129.1%	Includes $35Mn of dry hole & unproved impairment
DD&A	1,149	1,101	1,256	1,022	48	**-0.09**	4.3%	
Interest expense	220	210	216	209	10	**-0.02**	4.8%	
Other expenses	581	0	3,346	1,347	581	**-1.14**	NA	$297Mn of unrealized derivative losses, $18Mn impairments, $40Mn gains on sale
Income tax expense	(383)	(179)	(1,392)	(645)	(204)	**0.40**	114.3%	
Minority interest	36	74	32	(274)	(38)	**0.07**	-51.1%	
Reported net income	(1,034)	**(596)**	**(3,268)**	**(1,250)**	**(438)**	**-0.86**	**73.6%**	
Adjustments	465	0	2,903	954	465	**0.91**	**NA**	
Adjusted net income	(569)	**(596)**	**(365)**	**(296)**	**27**	**0.05**	**-4.5%**	
Reported EPS	-2.03	-1.17	-6.48	-2.46	(0.86)		73.3%	
Adjusted EPS	(1.12)	**(1.17)**	**(0.72)**	**(0.58)**	0.05		-4.7%	Adjusted EPS of ($1.12) vs WR ($1.17) & Street ($1.17)
								First successful HZ deepwater well at Paon, 100 net feet of TVT pay
Shares outstanding	509	508	504	508	1	**0.00**	**0.2%**	Quiet quarter following March 1 guidance, good cost control
Production (kboed)						**YoY %**	**Var. %**	
Crude and condensate								
United States	232	230	223	229	2	4.0%	0.8%	US oil volumes to the high end of 230-232kbd
Algeria	65	64	70	68	1	-7.1%	1.6%	Big beat in the Wattenberg - 238kboed vs WR 228kboed
Other International	18	19	28	19	(1)	-35.7%	-5.3%	Wattenberg D&C for a SRE down to $2.4Mn in the quarter
Natural Gas Liquids								
United States	122	121	136	112	1	-10.3%	0.6%	Delaware Basin production in line with WR at 38kboed
International	6	6	7	6	0	NA	0.5%	No commentary on potential issues at Heidelberg, GoM production in line
Natural Gas								
United States	2,303	2,252	2,738	2,070	51	-15.9%	2.3%	
Total production (kboed)	**827**	**816**	**920**	**779**	**11**	**-10.2%**	**1.4%**	Towards higher end of 813-835kboed guide, but on US gas mainly
								No change to full year guide of 770-781kboed
Realizations								
Crude and condensate								
United States	28.04	30.27	44.19	37.83	(2.23)	-36.5%	-7.4%	Crude oil realizations slightly weaker than expected, offset by cash costs
Algeria	34.62	34.86	56.02	44.69	(0.24)	-38.2%	-0.7%	
Other International	32.27	34.51	49.55	44.42	(2.24)	-34.9%	-6.5%	
Natural Gas Liquids								
United States	14.98	12.78	17.29	16.86	2.20	-13.4%	17.2%	NGL realizations continue to surprise better than expectations
Natural Gas								
United States	1.75	1.80	2.60	2.08	(0.05)	-32.7%	-2.9%	
Cash Flow & Balance Sheet								
Operating Cash Flow	306	312	1,240	810	(6)		-2.0%	Discretionary cash flow from operations of $486Mn
Capital & Exploratory Expenditures	756	797	1,822	1,313	(41)		-5.1%	Excludes $140Mn of WES capex, below guidance to $800-$900Mn
Free Cash Flow (OCF - C&E)	(450)	**(484)**	**(582)**	**(503)**	**34**		**-7.1%**	No change to FY budget of $2.6-$2.8Bn (ex WES)
Dividends Paid	25	25	139	138	(0)		-1.6%	
Share Repurchase	0	0	36	17	0		NA	
Cash & Equivalents	2,947	1,667	2,308	939	1,280		76.8%	Net debt rose about $1.8Bn Q/Q
Total Debt	18,751	15,751	16,865	15,751	3,000		19.0%	$12.88Bn net debt excluding WES/WGP

Source: Company reports, Bloomberg Finance LP, Wolfe Research estimates

Financials

Exhibit 3: Anadarko Petroleum Earnings Summary

US$m	2014	1Q	2Q	3Q	4Q	2015	1Q	2Q	3Q	4Q	2016E	2017E
Exploration & Production	10,612	847	1,314	977	975	4,113	539	731	889	1,073	3,231	5,995
Midstream	850	236	263	223	227	949	244	237	244	254	978	1,022
Marketing	(223)	(48)	(56)	(46)	18	(132)	(41)	(41)	(16)	(0)	(99)	(14)
Segment Adj. EBITDAX (ex-divestment G/L)	**11,239**	**1,035**	**1,521**	**1,154**	**1,220**	**4,930**	**742**	**926**	**1,117**	**1,326**	**4,111**	**7,003**
Corporate & Other	(430)	(52)	(17)	(187)	48	(208)	77	79	71	51	278	(40)
Total Adj. EBITDAX (ex-divestment G/L)	**10,876**	**1,273**	**1,519**	**967**	**793**	**4,552**	**695**	**834**	**1,075**	**1,202**	**3,807**	**6,445**
Exploration Expense	1,639	1,083	103	1,074	384	2,644	126	80	80	80	366	340
DD&A	4,550	1,256	1,214	1,111	1,022	4,603	1,149	1,091	1,120	1,093	4,454	4,532
Interest	772	216	201	199	209	825	220	210	228	228	887	964
Special Items	3,852	3,346	(184)	1,660	1,347	6,169	581	0	0	0	581	0
EBT	**63**	**(4,628)**	**185**	**(3,077)**	**(2,169)**	**(9,689)**	**(1,381)**	**(547)**	**(353)**	**(199)**	**(2,480)**	**609**
Income Tax	1,617	(1,392)	77	(917)	(645)	(2,877)	(383)	(128)	(64)	(14)	(589)	413
Minority Interest	187	32	47	75	(274)	(120)	36	78	80	84	278	337
Reported Net Income	**(1,741)**	**(3,268)**	**61**	**(2,235)**	**(1,250)**	**(6,692)**	**(1,034)**	**(497)**	**(370)**	**(270)**	**(2,170)**	**(141)**
After-tax Impact of Special Items	3,845	2,903	(57)	1,877	954	5,677	465	0	0	0	465	0
Adjusted Net Income	**2,104**	**(365)**	**4**	**(358)**	**(296)**	**(1,015)**	**(569)**	**(497)**	**(370)**	**(270)**	**(1,705)**	**(141)**
Reported EPS	(3.44)	(6.45)	0.12	(4.40)	(2.46)	(13.17)	(2.03)	(0.98)	(0.73)	(0.53)	(4.26)	(0.28)
Adjusted EPS	**4.15**	**(0.72)**	**0.01**	**(0.70)**	**(0.58)**	**(2.00)**	**(1.12)**	**(0.98)**	**(0.73)**	**(0.53)**	**(3.35)**	**(0.28)**
CFPS	16.46	2.45	2.52	0.60	1.59	7.16	0.60	0.96	1.38	1.62	4.56	9.09
Dividend/Share	0.99	0.27	0.27	0.27	0.27	1.08	0.05	0.05	0.05	0.05	0.20	0.20
Avg outstanding diluted shares	507	507	509	508	508	508	509	509	509	509	509	509
Average Brent	98.91	53.80	62.07	51.30	43.56	52.68	35.21	40.00	45.00	48.00	42.05	58.00
Average WTI	93.00	48.40	57.71	46.50	42.02	48.66	33.63	38.00	43.00	46.00	40.16	56.00
Average Nymex Natgas	4.35	2.82	2.73	2.76	2.24	2.64	1.98	2.00	2.25	2.50	2.18	3.00
Production (Kboed)	837	920	846	783	779	832	827	783	761	743	778	776

Source: Company reports, Wolfe Research estimates

Exhibit 4: Anadarko Petroleum Cash Flow Statement

US$m	2014	1Q	2Q	3Q	4Q	2015	1Q	2Q	3Q	4Q	2016E	2017E
CF from Operating Activities												
Net Income	(1,563)	(3,236)	108	(2,160)	(1,524)	(6,812)	(998)	(419)	(289)	(186)	(1,892)	196
DD&A	4,550	1,256	1,214	1,111	1,022	4,603	1,149	1,091	1,120	1,093	4,454	4,532
Deferred Income Tax	(105)	(1,198)	11	(1,440)	(309)	(2,936)	(413)	(183)	(129)	(85)	(810)	(99)
Dry hole expense/impairments of unproved	1,245	1,009	31	953	274	2,267	35	0	0	0	35	0
Impairments	836	2,783	30	758	1,504	5,075	16	0	0	0	16	0
(Gains)/losses on divestitures	(1,891)	334	91	578	(19)	984	(2)	0	0	0	(2)	0
Total (gains)/losses on derivatives	207	152	(310)	281	(222)	(99)	299	0	0	0	299	0
Net cash from derivative settlement	371	91	81	79	84	335	105	0	0	0	105	0
Other	4,687	49	25	145	0	219	115	0	0	0	115	0
Change in assets and liabilities	129	(5,744)	(38)	822	(553)	(5,513)	(443)	0	0	0	(443)	0
Net Cash From Operating	**8,466**	**(4,504)**	**1,243**	**1,127**	**257**	**(1,877)**	**(137)**	**489**	**702**	**823**	**1,877**	**4,629**
CF from Investing Activities												
Capital Expenditures	(9,508)	(1,822)	(1,401)	(1,352)	(1,313)	(5,888)	(896)	(694)	(590)	(495)	(2,676)	(3,178)
of which, APC Capex	(2,219)	(1,666)	(1,279)	(1,225)	(1,193)	(5,363)	(756)	(694)	(590)	(495)	(2,536)	(3,178)
of which, WES Capex	(2,219)	(156)	(122)	(127)	(120)	(525)	(140)	0	0	0	(140)	0
of which, other	(2,219)	0	0	0	0	0	0	0	0	0	0	0
Acquisitions	(1,527)	0	(3)	0	0	(3)	0	0	0	0	0	0
Divestitures of properties and equipment	4,968	22	678	548	167	1,415	35	105	0	0	140	0
Other-net	(405)	(125)	(134)	(107)	71	(295)	(112)	0	0	0	(112)	0
Net Cash Used in Investing	**(6,472)**	**(1,925)**	**(860)**	**(911)**	**(1,075)**	**(4,771)**	**(973)**	**(589)**	**(590)**	**(495)**	**(2,648)**	**(3,178)**
CF from Financing Acitivities												
Borrowings, net of issuance costs	2,879	4,583	204	23	(178)	4,632	3,080	0	0	0	3,080	0
Repayment of debt	(1,425)	(2,830)	(1,027)	(167)	(9)	(4,033)	0	0	0	0	0	0
Change in checks outstanding	62	(39)	(70)	6	80	(23)	0	0	0	0	0	0
Dividends paid	(505)	(139)	(138)	(138)	(138)	(553)	(25)	(25)	(25)	(25)	(101)	(102)
Repurchase of stock	(45)	(36)	(1)	(1)	(17)	(55)	0	0	0	0	0	0
Issuance of common stock	121	12	7	2	13	34	0	0	0	0	0	0
Distributons to noncontrolling interests	(216)	(67)	(68)	(73)	(74)	(282)	(78)	0	0	0	(78)	0
Other	804	(115)	574	32	9	500	142	0	0	0	142	0
Net Cash from Financing	**1,675**	**1,369**	**(519)**	**(316)**	**(314)**	**220**	**3,119**	**(25)**	**(25)**	**(25)**	**3,043**	**(102)**
Exchange rate effects	2	(1)	1	(1)	(1)	(2)	(1)	0	0	0	(1)	0
Increase/Decrease in Cash	**3,671**	**(5,061)**	**(135)**	**(101)**	**(1,133)**	**(6,430)**	**2,008**	**(126)**	**87**	**302**	**2,271**	**1,349**
Beginning Cash	3,698	7,369	2,308	2,173	2,072	7,369	939	2,947	2,821	2,908	939	3,210
Ending Cash	**7,369**	**2,308**	**2,173**	**2,072**	**939**	**939**	**2,947**	**2,821**	**2,908**	**3,210**	**3,210**	**4,559**

Source: Company reports, Wolfe Research estimates

Valuation Methodology and Risks

We value APC using both sum-of-the-parts NAV and relative multiple analysis. Our NAV employs an asset-by-asset DCF for the upstream, based largely on Wood Mackenzie project-level production/revenue/cost/capex estimates adjusted for our commodity price deck, which is then adjusted for country risk based on numerous criteria related to fiscal regime, geography, geopolitics and geological risks. For some specific assets we construct a separate DCF model and feed it into the sum-of-the-parts. For midstream assets we apply a variety of metrics depending on available information, including but not limited to per store value, EV/EBITDA, per bbl or per megawatt values, value per pipeline mile and share of publicly-traded MLP and GP stakes. We also often apply an adjustment to the whole NAV for management/strategy quality, which can be either a premium or discount to depending on the company and evolving evidence in results. Our relative multiple analysis includes forward 12-month and mid-cycle P/E, EV/EBITDAX and EV/DACF; current cash flow yield, dividend yield and value per 2P reserves. For the purposes of setting our fair value, our P/E and EV/EBITDAX methodologies are the focus, and it is based on a target multiple derived from our ROCE estimate, applied to mid-cycle and/or 2016 EPS and EBITDAX estimates.

Exhibit 5: Global Integrateds & Large Cap E&P Valuation Comparison

							Bloomberg Consensus						Wolfe Research Estimates										
Company	Rec	Target	Share price ($)	Mkt Cap ($B)	Debt/ Capital	Divyld Current	P/E 2015	P/E 2016e	P/E 2017e	EV/EBITDA 2015	EV/EBITDA 2016e	EV/EBITDA 2017e	Price/Earnings 2015	Price/Earnings 2016e	Price/Earnings 2017e	EV/EBITDAX 2015	EV/EBITDAX 2016e	EV/EBITDAX 2017e	EV/DACF 2015	EV/DACF 2016e	EV/DACF 2017e	NAV ($)	EV/2P ($)
Global Integrateds																							
ExxonMobil	UP	76	88.11	365.7	16.2%	3.4%	23.1x	34.6x	20.7x	9.6x	11.3x	8.4x	23.2x	31.7x	16.9x	9.8x	10.4x	7.2x	13.3x	14.1x	10.1x	79	6.77
Chevron	OP	105	101.32	191.0	14.2%	4.2%	27.9x	73.0x	21.9x	7.9x	9.1x	6.3x	31.1x	71.5x	16.2x	7.7x	7.5x	4.8x	11.6x	12.1x	7.4x	93	4.27
Royal Dutch Shell a			1,755	141.0	12.0%	6.4%	15.0x	23.2x	13.3x	6.7x	6.1x	4.5x											
Royal Dutch Shell b			1,762	141.0	12.0%	6.7%	15.1x	23.3x	13.3x	6.7x	6.1x	4.5x											
Total SA			42.73	105.9	15.9%	5.6%	11.8x	17.0x	12.3x	6.2x	7.6x	5.9x											
BP			368.40	68.7	17.3%	6.1%	15.3x	31.6x	14.5x	5.8x	6.4x	4.9x											
Simple Avg					**14.6%**	**5.4%**	**18.0x**	**33.8x**	**16.0x**	**7.2x**	**7.8x**	**5.8x**	**27.1x**	**51.6x**	**16.6x**	**8.8x**	**8.9x**	**6.0x**	**12.4x**	**13.1x**	**8.8x**		**5.52**
Wgtd Avg					**14.7%**	**4.8%**	**20.0x**	**36.6x**	**17.6x**	**7.9x**	**8.7x**	**6.4x**	**25.9x**	**45.4x**	**16.7x**	**9.1x**	**9.4x**	**6.4x**	**12.7x**	**13.4x**	**9.2x**		**5.91**
Large Cap NA E&P																							
ConocoPhillips	PP		45.08	55.8	34.7%	2.2%	NA	NA	172.7x	10.5x	15.0x	8.0x	NA	NA	NA	6.8x	16.7x	7.7x	9.9x	17.8x	8.9x	50	3.66
Occidental	OP	77	75.57	57.7	15.7%	4.0%	NA	NA	52.3x	12.1x	16.8x	10.1x	551.2x	NA	53.4x	10.6x	14.5x	8.5x	17.9x	15.9x	9.6x	77	8.07
Suncor	PP		34.95	55.3	20.7%	3.3%	31.0x	NA	30.4x	8.2x	12.8x	8.3x	70.7x	NA	26.3x	11.1x	11.3x	7.6x	9.4x	13.4x	8.1x	38	5.20
EOG	OP	81	80.63	44.3	30.3%	0.8%	NA	NA	NA	12.1x	21.4x	12.8x	1298.9x	NA	165.9x	12.4x	21.3x	11.5x	13.0x	24.0x	12.3x	85	0.93
Anadarko	OP	59	50.10	25.6	47.5%	0.4%	NA	NA	NA	9.4x	13.5x	8.6x	NA	NA	NA	9.8x	11.7x	6.9x	10.8x	15.6x	8.5x	73	3.75
Canadian Natural	PP		35.93	39.4	37.9%	2.6%	NA	NA	82.2x	10.1x	15.8x	8.7x	149.4x	NA	50.5x	10.7x	14.5x	39.4x	9.7x	13.9x	39.9x	32	1.78
Apache	UP	45	52.13	19.7	56.2%	1.9%	NA	NA	292.9x	7.5x	11.3x	8.0x	NA	NA	24.6x	8.0x	8.7x	5.8x	8.7x	11.1x	7.1x	47	3.70
Hess	OP	70	56.75	18.0	14.5%	1.8%	NA	NA	NA	9.1x	16.8x	9.0x	NA	NA	NA	8.7x	13.9x	7.3x	10.1x	25.7x	8.3x	77	3.92
Devon Energy	PP		32.75	17.2	44.8%	0.7%	13.3x	NA	61.1x	6.6x	16.3x	9.7x	12.9x	NA	58.3x	5.9x	16.8x	8.9x	5.3x	19.1x	9.7x	38	4.33
Pioneer Natural	OP	195	159.21	26.0	18.8%	0.1%	NA	NA	NA	15.6x	16.6x	14.0x	NA	NA	NA	15.5x	15.0x	12.8x	28.9x	21.3x	14.8x	214	5.86
Marathon Oil	UP	10	12.79	10.8	23.4%	1.6%	NA	NA	NA	8.5x	12.9x	7.7x	NA	NA	231.8x	8.1x	11.5x	6.9x	8.6x	12.0x	7.2x	11	2.81
Noble Energy	OP	40	35.21	15.3	38.4%	1.1%	617.7x	NA	NA	9.7x	11.4x	9.6x	66.9x	NA	NA	8.0x	11.8x	8.6x	9.4x	12.8x	9.3x	43	2.73
Continental			35.93	13.5	60.3%	0.0%	NA	NA	NA	10.7x	15.0x	11.4x											
Whiting Petroleum	UP	3	10.29	2.1	52.0%	0.0%	NA	NA	NA	5.4x	9.5x	7.2x	NA	NA		5.4x	9.4x		6.9x	15.4x		4	
Cenovus			14.93	12.4	12.8%	1.3%	NA	NA	NA	7.0x	17.8x	9.9x											
Encana			8.33	7.1	44.4%	0.7%	NA	NA	328.2x	NA	9.9x	7.0x											
Chesapeake			5.80	3.9	75.5%	0.0%	NA	NA	16.2x	6.9x	16.8x	10.7x											
Concho	OP	111	112.83	14.8	30.2%	0.0%	95.9x	NA	NA	10.4x	12.5x	13.2x	115.8x	NA		10.7x	12.4x		14.0x	14.4x		127	
Cimarex	OP	111	105.37	10.0	16.5%	0.3%	NA	NA	65.1x	13.5x	20.7x	12.5x	NA	NA		14.3x	19.2x		15.9x	21.7x		131	
EQT	OP	76	68.03	11.7	NA	0.2%	120.6x	NA	307.8x	12.1x	14.0x	11.3x	97.8x	NA		13.1x	14.7x		13.1x	12.1x		80	
Cabot Oil & Gas	PP		23.88	11.1	50.2%	0.3%	NA	NA	93.3x	15.5x	24.5x	13.1x	70.0x	50.1x		12.9x	10.0x		14.6x	11.2x		29	
Southwestern	UP	5.7	11.92	4.7	67.2%	0.0%	71.4x	NA	36.0x	8.1x	18.0x	11.5x	74.3x	NA		5.7x	15.5x		7.4x	21.0x		18	
Range	PP		42.17	7.2	49.0%	0.2%	129.4x	NA	NA	11.0x	19.3x	16.8x	87.0x	NA		11.4x	15.8x		14.1x	21.8x		45	
Antero Resources	OP	30	25.85	7.2	39.1%	0.0%	52.0x	43.5x	100.6x	10.9x	9.6x	9.4x	45.4x	41.9x		10.1x	8.8x		12.7x	11.3x		25	
Murphy Oil	UP	23	33.43	5.8	31.1%	4.2%	NA	NA	NA	6.2x	9.7x	6.7x	NA	NA	61.8x	6.2x	6.8x	5.0x	7.4x	8.2x	8.2x	31	2.87
EP Energy	PP		4.41	1.1	88.1%	0.0%	5.7x	14.3x	NA	NA	NA	NA	5.7x	NA		4.0x	5.8x		4.7x	8.5x		3	
California Resources	PP		1.93	0.7	62.0%	0.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.6x	13.3x	7.9x	11.4x	17.3x	9.5x	4	4.62
Simple Avg					**40.3%**	**1.1%**	**141.4x**	**43.5x**	**126.1x**	**9.9x**	**15.1x**	**10.2x**											
Wgtd Avg					**31.2%**	**1.7%**	**31.9x**	**0.6x**	**66.4x**	**10.2x**	**15.6x**	**10.0x**	**NA**	**NA**	**NA**	**9.7x**	**14.7x**	**8.4x**	**12.0x**	**16.5x**	**9.3x**		**3.95**
Overall Simple Avg					**33.1%**	**1.9%**	**88.5x**	**35.2x**	**91.3x**	**9.3x**	**13.7x**	**9.3x**	**203.5x**	**46.0x**	**84.1x**	**9.4x**	**13.0x**	**10.3x**	**11.5x**	**15.9x**	**11.5x**		**3.87**

Source: Company reports, Bloomberg Finance LP, FactSet, Wolfe Research estimates

The key risks to the downside for APC include increased regulatory burdens in the US and elsewhere, an expensive acquisition, rising project costs at key assets, delays in project startups, and reductions in production guidance. General risks to the whole sector include a slowing global economy, increased taxation and regulation, falling gasoline demand, lower returns, increasing competition from national oil companies and disasters, both natural and man-made.

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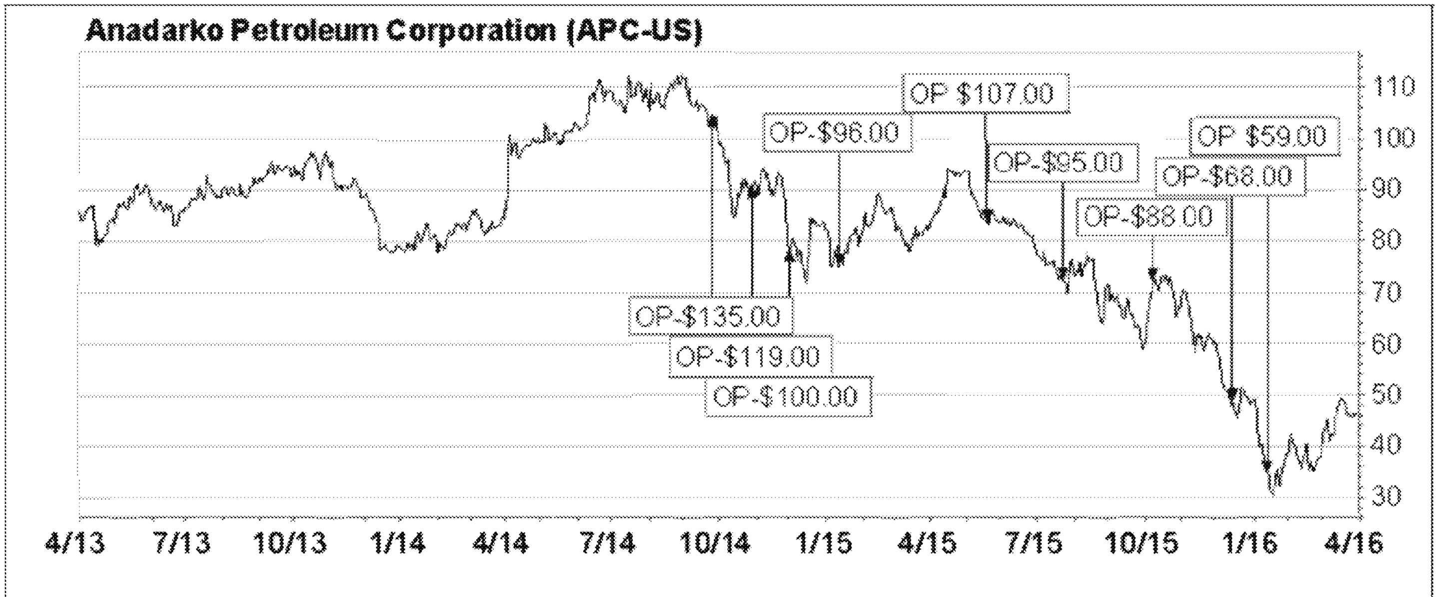
Price Chart with Ratings and Target Price History



Note: OP = Outperform; PP = Peer Perform; UP = Underperform

Wolfe Research, LLC Fundamental Valuation Methodology:

Company:	Fundamental Valuation Methodology:
APC	Forward P/E & EV/EBITDAX, and Sum of the Parts NAV

Wolfe Research, LLC Fundamental Recommendation, Rating and Target Price Risks:

Company:	Risks That May Impede Achievement of the Recommendation, Rating or Target Price:
APC	Weaker oil and gas prices, increased environmental regulation in key regions, delays in project startup, weakening demand for gasoline and diesel, increasing competition from national oil companies, pipeline and project leaks, severe weather and natural disasters.

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EXHIBIT 10

Unofficial Transcript
May 2, 2017 Press Conference
by Fire Chief Theodore Poszywak of the
Frederick Firestone Fire Protection District[1]

[Summer Campos]: Hello, my name is Summer Campos, and I am the public information officer for the Frederick Firestone Fire Protection District. And I want to thank all of you for coming today. Today, you will hear an update from Fire Chief Ted Poszywak about the results of the fire origin and cause investigation. Also present today is Firestone Chief of Police David Montgomery. Following Chief Poszywak's statement, we will take a handful of questions. Thank you again for coming, and with that, I'd like to introduce the Fire Chief of Frederick Firestone Fire Protection District, Ted Poszywak.

[**Chief Poszywak]:** Thank you, Summer. And thanks again to all of you for being here on short notice. Thank you for your patience also as we've been involved in conducting this very intense and serious investigation. Firestone is a small and tight-knit community. Many of our community including our first responders knew Mark Martinez and Joey Irwin very well and are connected to their extended families. It has been a time of great grief for our community, and a time of great work for our investigators and first responders. We also continue to pray for the recovery of Erin Martinez, who is still hospitalized.

First, I want to address the purpose of today's conference. The focus of today is to share the results of our investigation into the origin and cause of the April 17th explosion and subsequent fire at 6312 Twilight Avenue in Firestone, the home of the Martinez family. I want to acknowledge that there are many questions, many of them that will go well beyond what we will be able to cover today. Like you, we are eager to find all of the answers, but we don't have all of them at this time. And we'll do our best to share with you all that we can. That said, this is still a complex and ongoing investigation. What I will be able to share with you today is information about our response to the incident, the process of our investigation, and our findings as to the origin and cause.

Before I get started, I want to reiterate that our investigators have determined that there is no threat to surrounding homes as a result of the April 17th incident.

On April 17th at 4:46 in the afternoon, the Frederick Firestone Fire Protection District received a call to a house explosion at 6312 Twilight Avenue in the Oak Meadows subdividsion of Firestone. Our crews, the Firestone police department, and mutual aid crews from the Mountain View Fire Protection District and Platteville Fire Protection District responded to the scene to begin rescue, assessment and protection efforts.

As is standard protocol and procedure for all structure fires, we isolated the utilities going to the home in order to protect the access and efforts of emergency responders, as well as to isolate any

[1] Available at https://www.facebook.com/Denver7News/videos/latest-on-firestone-home-explosion-investigation/10154807218543271/ (last accessed July 11, 2024) (cited at ECF 237-1, n. 62).

threats of further damage or danger to surrounding structures. Part of that utility control is to request the various utility companies respond to the scene to disconnect their utility including gas and power at the meters. Due to the extent of the damage and collapse of all structural components of the home, [unintelligible] command determined it was within the interest of public safety to expand the perimiter of utility control to eliminate any secondary hazards and protect neighboring residents. This included utility control of the adjacent home at 6310 Twilight Avenue, which had active fire conditions and damage from the initial explosion. Additional expanded protection and control measures included the evacuation of homes within the vicinity of the incident operations and control of an existing oil and gas well southeast of the explosion.

Emergency crews continued efforts to control the fire at both homes, as well as provide emergency medical care to Erin Martinez and her son, who were rescued with a heroic efforts of construction crews and neighbors immediately following the explosion. During the fire control efforts, steps were immediately taken to evacuate any hazards – to evaluate any hazards to surrounding properties and to ensure a safe perimeter. Due to the extent of the damage and the fact that the initial dispatch was reported as an explosion, utility crews and emergency response crews initiated air monitoring almost immediately and determined that the hazard area did not extend beyond 6312 Twilight Avenue and the adjacent home.

Once access to the debris could be made, investigators assisted Black Hills energy crews with securing and removal of the domestic gas meter for evidence and laboratory evaluation. Those recently obtained results of that testing demonstrate that the domestic gas supply to the home was in an on position and that the meter was operating normally at the time of the explosion. Testing and evaluation also showed that there was no flow of natural gas into the home after 2:30 p.m. on April 16th and at any point on April 17th through the meter, signifying that the gas appliances, namely the furnace and water heater, were not being used on April 16th and April 17th.

In addition to securing and addressing the firearm safety of neighboring residents, utility and emergency response crews continued air and soil monitoring of the safety perimeter throughout the suppression and investigation phases of the incident to ensure no hazard on the site had migrated off the site. Those efforts were assisted by Anadarko, Black Hills Energy, and the Colorado Oil and Conservation Commission or COGCC. Throughout this monitoring, at no time were any hazards detected beyond 6312 Twilight Avenue and the adjacent home. This monitoring uncovered the presence of combustible gas in the French drains and the window wells of the Martinez home, and the basement and French drain of the adjacent home on April 17th. The residual gas in the adjacent home was ventilated by emergency response crews and once completed and sensed, readings in the adjacent home found no presence of gas. At no time was there gas detected in any area aside from these two properties.

Furthermore, the oil and gas well to the southeast of the incident was shut-in -- or production ceased – on April 17th, and testing has since determined that there was no leaking at the well site. As a result of the ongoing investigation efforts and monitoring, we are able to conclude that whatever had caused the explosion and fire at 6312 Twilight was isolated to the immediate site and that residents and buildings outside of the site were in no danger of secondary fire or

explosion. This is the message we have made every effort to communicate to residents throughout this tragedy, while at the same time not compromising this investigation into origin and cause and the tragic deaths of Mark Martinez and Joey Irwin, and the critical injuries to Erin Martinez. We greatly appreciate your help, the media's help, throughout this tragedy, in communicating this to our residents in order to reassure their safety as we work through a very complex investigation.

I'll draw your attention to the photo here to my left, and I'll point out some things as I go through these next phases of the investigation.

Early in the investigation, we began excavating and testing of all oil and gas flow lines within the immediate vicinity of the explosion. This included an active flow line running along the southern property line from the wellhead to a tank battery to the west. With the cooperation of Anadarko, this line, which had been turned off with the shut-in of the well on April 17th, was pressure-tested and no leaks were present. And this line runs basically right along this direction.

There was also an abandoned flow line further to the south of that line, and running to the west as well, that was pressure-tested and found to be secure. A third and final abandoned set of flow lines running from the well to a former storage tank battery location – location to the north of the site then became our focus. This line set, which consists of a two-inch abandoned flow line and a one-inch abandoned flow line that would have intersected the Martinez home on the southwest corner of the foundation, was excavated at a depth of approximately seven feet. And that flow line ran from the well and curved up and terminated right about here.

Investigators found these lines terminated approximately six feet from the foundation of the home, and the lines had been cut all the way through. The lines had been abandoned since the tank battery to the north was moved prior to the development of the subdivision. Both lines were traced back to the wellhead, where the two-inch line was disconnected and capped but the one-inch line was still connected to the well through a valve. This valve was in the on position until it was turned off by an operator during the night of the explosion and the fire -- and fire at the request of emergency responders as part of the utility control shutoff process. Where the lines had been cut was also approximately five feet from the southern French drain in the Martinez home. You can see the shadow of the French drain right here.

Analysis of the gas found that it was pre-refined product directly from the wellhead that had not been odorized with mercaptan as domestic gas is before it's transported to buildings. This pre-refined gas is a mixture of methane, which is lighter than air, or rises, and propane, which is heavier than air, or sinks to the lowest point, and various other minerals and elements. It is much more volatile than refined gas, such as natural gas and propane, that are used in everyday consumption. Once investigators were able to begin excavation in the basement of the Martinez home, the sump pit was uncovered and testing revealed that the same gas found in the excavation pit where the line was cut was the gas present in the French drain of the home and adjacent home and was also the same gas found in the sump-drain that is connected to the French drains around the home. Continued and expanded monitoring conducted by COGCC has verified there is no active contamination beyond these two homes. And furthermore, the contamination is not expanding since the control of the source on April 17th.

Mapping of this gas by investigators showed that the gas had bled off the wellhead through this line that had not been disconnected when the line was abandoned. The gas followed the flow path of the line where it was cut and into the surrounding soil at the foundation of the Martinez home, where it slowly saturated the soil and migrated into the adjacent French drain and into the drain line through the sump pit of the basement of the home. This fugitive gas, which would have been odorless even to a trained tradesperson like Joey Irwin, eventually reached the right mixture of gas and air, found an ignition source just prior to 4:46 pm on April 17th while Mark and Joey were in the basement, and erupted into sudden and violent explosion and rapidly expanded into a fuel-fed fire that destroyed the home taking the lives of Joey Irwin and Mark Martinez.

While the Frederick Firestone Fire Protection District to this point has been the lead investigating agency of origin and cause in coordination with the Fire and Police department, we have asked for and received the cooperation of the Colorado Bureau of Investigation, the Colorado Oil and Gas Conservation Commission, Anadarko, who was the operator of the well, Black Hills Energy, who is the domestic gas utility company, Travelers Insurance, the insurer of both the Martinez home and the adjacent home, Century Homes, which was the builder of the home and of course, officials and staff from the town of Firestone. Our commitment throughout and continuing through this incident is to ensuring and reassuring the neighborhood safety and helping the healing of our small community and the Martinez and Irwin families.

To reiterate, based on our investigation into the origin and cause, what we can say at this point in the ongoing investigation is the following: The origin of the explosion and subsequent fire that destroyed the Martinez home and damaged the neighboring home, resulting in the deaths of Mark Martinez and Joey Irwin and the severe injury to Erin Martinez was unrefined, non-odorized gas that entered the home through a French drain and sump pit, due to a cut abandoned line attached to an oil and gas well in the vicinity.

Given these facts, I want to review quickly what we can say about this case at this point. That there were concentrations of fugitive gas that was non-odorized in the home. That that gas came from a severed and uncapped abandoned line that was not disconnected and capped at the wellhead. Because unrefined natural gas has no odor, those inside the home would not have smelled it. I want to stress this point: There is absolutely no evidence to suggest that the deaths of Mark Martinez and Joey Irwin, his brother-in-law, were the result of any criminal or improper activity on their part. I also want to note, given the attention on this issue, the proximity of the well to the home was not a contributing cause in this incident or investigation. It was the pipeline rather than the wellhead that caused the buildup of methane that led to the explosion. It would appear an unusual and tragic set of circumstances occurred here, including circumstances around the proper identification of and maintenance of the related abandoned flow lines.

Now that the origin and cause portion of the investigation is complete, we'll be sharing our findings with COGCC and other regulatory agencies in order to allow them to review practices and procedures and take necessary steps moving forward. I want once again to reiterate that no adjacent homes are in any danger as a result of the severed line and a full cleanup of the original hazard on the site will be required and thoroughly completed once this on-site portion of the

ongoing investigation is complete. The adjacent well and all flow lines have been tested and verified in safe condition, and the well remains in the shut-off condition.

As far as the next steps in terms of the investigation, this is not the final but only the initial step in the process. We will now move forward into the next steps along with Chief Montgomery and the Firestone Police Department to complete the death investigations. Again, we want to thank you for your support and patience as we investigated the origin and cause, and I would like at the same time to ask for that same patience as the town of Firestone Police Department continues the next and equally crucial phase of this investigation. We will certainly keep you updated on the findings of that next phase as soon as that is possible. In the meantime, we appreciate the support for our community, the support for our first responders, the support of Erin and the Martinez and Irwin families and we ask that you respect the grief that this has caused our community and the families, and our need to heal together to continue to build upon the high quality of life that has drawn us to this very special place that Joey and Mark and their families and each of us love so dearly. That concludes my written remarks.

[Summer Campos]: At this time, we will take some questions.

[Question]: Dan Elliot with the Associated Press. Chief, do you know how that line ended up being cut?

[**Chief Poszywak]:** Yes sir, thank you for the question. That is currently part of the ongoing investigation certainly – certainly something that we as investigators and both departments are interested in uncovering.

[Question]: When was the – You said that – When was the tank battery removed? You said there were two lines – the two-inch one got cut, the one-inch one did not get cut. What's the timeframe for that activity? Is that prior to the development?

[**Chief Poszywak]:** So to clarify, there were two lines, a two-inch and a one-inch line, both running from the same location of the wellhead to the abandoned battery. Both of those had been cut at the foundation to the Martinez home. One of them was disconnected at the battery, the two-inch line, which would have been the main flow line, the other one remained connected at the wellhead. So just to clarify those points. As far as when that battery was removed, the development would have been somewhere between 1999 and 2002 and those records can be found through the town of Firestone.

[Question]: Yeah, hi, so to clarify, the lines were related and ran from the nearby well or no, it came from a different, separate tank battery?

[**Chief Poszywak]:** Thank you for the clarification. So both of these lines ran from the well to the abandoned battery [two people talking] . . . the existing well to the southeast of the site. Both of them ran alongside each other at a depth of about seven feet at the Martinez home to the wells, the old, abandoned, since-removed oil battery. Both of those were cut at the foundation of the Martinez home. One of those is disconnected at the well site and has been disconnected and

properly capped. The one-inch line, which is also referred to in the industry as a return line, was cut at the Martinez home but was not disconnected from the oil wellhead.

[Question]: Okay, and then sorry, one last clarification. So when you say that the – the vicinity, the closeness of the well to the home does not appear to be a factor, but it is lines which ran from that well?

[**Chief Poszywak]:** That is correct. So the distance to the wellhead was not a factor in this case or the investigation. It was the abandoned flow lines that were the source of the leak and explosion.

[Question]: So is this something that could have been caught in pressure testing or different types of testing were done to these lines by an operator or I don't know, like developer, anyone that would be down in that area?

[**Chief Poszywak]:** At this point, we don't have all the facts as to how the line was cut, so I don't want to speculate on that. But that is something that we will share with Colorado Oil and Gas Commission and is something that would be in their purview to look into.

[Question]: And that will be their job to then look into it?

[**Chief Poszywak]:** Yes, ma'am.

[Question]: Do you think that the gas got into the house through the French drains and up through the sump pump? Or do you think it leaked in through the foundation?

[**Chief Poszywak]:** So based on our investigation and what we've uncovered so far is that the gas, the flow of this gas, would have been through the broken line as it was operated, into the soil around the home, that would have leached into the French drain. The French drain would have run parallel to this line about five feet away and would have migrated through the French drains into the sump pump and into the basement of the home.

[Summer Campos]: This will be our last question right back here.

[Question]: Do you really want to clarify anything to do with what happened here? I know you said there was no manner of activity that kind of added to this, they weren't doing anything wrong but . . .

[**Chief Poszywak]:** Yes, ma'am. So as I mentioned, the – the investigation is certainly ongoing, and we're looking at every possible contributor or ignition source. The fact of the matter is that the gas being present where it shouldn't have been in the found – in the basement of the home and that it was un-odorized was the – was the cause of fire and the explosion.

[Question]: Who owns the line again, please sir?

[**Chief Poszywak]:** I'm sorry can you repeat that?

[Question]: Who owns the line?

[**Chief Poszywak]:** The flow line that we tested that is active is owned by Anadarko.

[Summer Campos]: Ok, we will take one more, right here.

[Question]: How long do you think that the methane had been leaking into the soil and into the home? And who owned the abandoned – the cut abandoned line?

[**Chief Poszywak]:** We don't know who the original owners of the cut or abandoned lines were. That's part of the ongoing investigation, certainly something that we're looking into. And I'm sorry, could you repeat the other part of your question?

[Question]: How long do you think methane had been leaking into the soil and into the home?

[**Chief Poszywak]:** So the preliminary records that we have at this point show that the well was shut-in, or in a non-producing state for all of 2016, and that the well are brought back online on January 28th and would have flowed up until around the incident. Those are the – that's the information that we have at this time.

[Question]: Can you clarify again, whether you think the lines are linked to the tank battery?

[**Chief Poszywak]:** That's still part of the ongoing investigation. We'll have to find out those answers still. They'll be part of the police department's portion of the investigation. I'll take one more.

[Question]: I'm so sorry. I have some clarifying questions too. To get clarification on that, so can you say a few months if it had been running since, I'm so sorry, did you say since 2016? So . . . [inaudible]

[**Chief Poszywak]:** Let me clarify those dates just to be completely clear. The well was shut-in or in a non-producing state for all of 2016. It was brought back online by the – by the owner-operator on January 28th, of 2017 and would have flowed until that point.

[Question]: Who wanted them cut?

[Summer Campos]: Thank you that's going to be it for today. Thank you everybody for coming. For more information, you can always go to our website, or our social media, our Facebook page, and that will be it for us today. Thank you so much.

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

In re ANADARKO PETROLEUM CORPORATION SECURITIES LITIGATION	§ § § § § § § § §	CIVIL ACTION NO. 4:20-CV-00576 JUDGE CHARLES ESKRIDGE

ORDER

On July 12, 2024, Plaintiffs filed a Motion to Exclude Certain Testimony of Defendants' Class Certification Expert Dr. Allen Ferrell ("Motion to Exclude").

Plaintiffs' Motion to Exclude is GRANTED.

SO ORDERED.

Signed on ________________, at Houston, Texas.

____
Hon. Charles Eskridge
United States District Judge